State of California
The Resources Agency
Department of Water Resources

LAND MANAGEMENT

FINAL REPORT

L-2

Oroville Facilities Relicensing
FERC Project No. 2100

AUGUST 2004

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FERC Project No. 2100

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REPORT SUMMARY

This Land Management Report, also known as Relicensing Study L-2 – *Land Management*, has been conducted to assist the California Department of Water Resources (DWR) in describing land management conditions within the study area. The study area for this report is defined as the area within the Project boundary and the area within ¼ mile around it. The Report identifies the public agencies responsible for managing lands within the study area, describes the management direction of these lands according to land use and resource management plans, and provides a discussion of the existing management practices of each responsible agency.

Land, facilities, and recreational interests in the study area are managed and administered by a number of State and federal agencies, including DWR, the California Department of Parks and Recreation (DPR), the California Department of Boating and Waterways (DBW), the California Department of Fish and Game (DFG), the U.S. Forest Service (USFS), and the U.S. Bureau of Land Management (BLM). The properties and management responsibilities of each agency within the Project boundary are detailed in a series of deeds, agreements, and transfers between the agencies involved. In addition to these land management agencies, two local jurisdictions, Butte County and the City of Oroville, are responsible for providing general planning direction for the remaining private lands within the study area.

The DWR was initially charged with management responsibility for approximately half of the 70,000-acre study area (the Project boundary) on behalf of the State of California. In 1961, the California Legislature passed the Davis-Dolwig Act (State Water Code Sections 11900-11925), which made DWR responsible for acquiring land and planning for recreation and fish and wildlife enhancement as part of the State Water Project (SWP). The State of California holds fee-title ownership to all State lands within the Project boundary and DWR is considered the “controlling” agency of these lands.

The Davis-Dolwig Act also identified three other State stakeholders: DPR, DFG, and DBW. To fulfill the Act’s mandate, DWR transferred management rights of the majority of State-owned land within the Project boundary to these agencies under a “transfer of control and possession,” a legal document that basically gives the receiving agency an easement to carry out management and maintenance responsibilities. In total, DWR transferred land management that included recreational and habitat interests of approximately 28,800 acres to DPR and 12,000 acres to DFG. These lands primarily constitute the LOSRA and Oroville Wildlife Area (OWA). DPR and DFG are charged with managing public recreation facilities and fish and wildlife resources, respectively.

As a result of these real estate transfers, DWR now has primary management responsibilities for approximately 3 percent of the land within the Project boundary. However, under the current FERC license, DWR does bear the ultimate responsibility for ensuring funding, development, and management of current and additional

recreation facilities. In addition, the Davis-Dolwig Act requires DWR to plan for and acquire land for recreation in conjunction with all State water projects. In keeping with its responsibility, DWR works with DPR and DFG to provide for recreational opportunities and funding throughout the study area.

The entities that manage land in the study area have developed land management plans that control existing land use and give direction to future land use within their jurisdictions. The land management direction for most of the land within the Project boundary encourages current and future recreation, natural resource conservation, and public facilities land uses. Lands adjacent to the Project boundary but within the study area are managed for different uses, such as agricultural/rural residential development, timber preserve, conservation, and recreation. Lands near the Diversion Pool, Thermalito Forebay, and near the City of Oroville are managed for uses such as residential, commercial, and agriculture. Careful evaluation of land management direction will be required in the study area to ensure coordinated land management efforts.

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ACRONYMS

ADA	Americans with Disabilities Act
af	acre feet
AIRFA	American Indian Religious Freedom Act
ALP	Alternative Licensing Procedure
ARP	Amended Recreation Plan
BCAG	Butte County Association of Governments
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CALFED	California and Federal (CALFED) Bay-Delta Program
CDF	California Department of Forestry and Fire Protection
cfs	cubic feet per second
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
DBW	California Department of Boating and Waterways
DFG	California Department of Fish and Game
DPR	California Department of Parks and Recreation
DWR	California Department of Water Resources
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
Forest Plan	Plumas National Forest Land and Resource Management Plan
Framework	Sierra Nevada Forest Plan Amendment
FRSA	Feather River Service Area
GP	General Plan
ISO	California Independent Systems Operator
LOSRA	Lake Oroville State Recreation Area
LRMP	Land and Resource Management Plan
LUDWG	Land Use, Land Management, and Aesthetics Work Group
maf	million-acre-feet
Management Plan	Oroville Wildlife Area Management Plan
MPO	Metropolitan Planning Organization
msl	mean sea level
MW	megawatts
NEPA	National Environmental Policy Act
NGOs	non-governmental organizations
NHPA	National Historic Preservation Act
OWA	Oroville Wildlife Area
PM&E	Protection, mitigation, and enhancement
PWA	Pre-Fire Workload Analyzer
R&PP	Recreation and Public Purpose Act
RAM	Resource Area Manager

RRMP	Redding Resource Management Plan

ACRONYMS (Cont.)

RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
SBF	State Board of Forestry
SVRA	State Vehicle Recreation Area
SWP	State Water Project
TEA	Transportation Equity Act
The Regulation	California Regulation on Hunting and Other Public Uses on State and Federal Areas
USACE	U.S. Army Corps of Engineers
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

1.1 BACKGROUND INFORMATION

The Lake Oroville Hydroelectric Facilities, an integral part of the California State Water Project (SWP), provides water supply, flood control, power generation, recreation, fish and wildlife enhancement, and salinity control to the State of California and is managed by the California Department of Water Resources (DWR). The Federal Energy Regulatory Commission (FERC) license for the Project expires in January 31, 2007 (FERC Project No. 2100); therefore, a relicensing process was initiated by DWR in June 2000.

As part of project relicensing, DWR decided to use an Alternative Licensing Procedure (ALP) that involves a collaborative planning effort with local, State, and federal agencies with mandatory conditioning authority, Native American tribes, and local and regional recreation interests, which was initiated in December 2000. Work groups representing major resource categories (e.g., Environmental, Engineering and Operations) are assisting DWR decision-making regarding relicensing issues, the scope of resource studies, and ultimately, protection, mitigation and enhancement (PM&E) measures. The Land Use, Land Management, and Aesthetics Work Group (LUWG) is assisting DWR with developing the land use and aesthetics studies.

Currently, land management within the study area is complex and the management directives/objectives for those lands are, in some cases, inconsistent. It is also difficult to ascertain how effectively lands are being managed (in relationship to their management directives/objectives) and the factors that influence land management, such as funding and staffing. These types of information are important to acquire so that Project lands (and other resources) can be managed in a way that reflects what is occurring on nearby lands and vice-versa.

1.1.1 Statutory/Regulatory Requirements

DWR owns and operates the Oroville Facilities, a multipurpose water supply, flood control, power generation, recreation, and fish and wildlife enhancements, project on the Feather River in Butte County. The facilities currently operate under a license issued by FERC, which expires on January 31, 2007. DWR intends to submit an application for a new FERC license at least 2 years prior to the expiration of the current license. The proposed relicensing process is based on cooperation and collaboration between federal and State resource agencies, Native American Tribes, local governments, non-governmental organizations (NGOs), and interested members of the public. Specific tasks of Relicensing Study L-2 – *Land Management*, are required by FERC under 18 CFR 4.51 (6)(iii) as part of the relicensing process.

The purpose of L-2 is to research, describe, and graphically display the management direction of study area lands, and identify the entities that are responsible for managing those lands. FERC requires that DWR understand land management directives and the entities which regulate them in order to appropriately manage Project lands and operations. This also helps DWR plan for future activities that may influence lands, such as enhancement measures proposed by work groups.

Existing land management actions by jurisdictions and agencies in the study area represents baseline conditions that will be used by DWR decision-making regarding relicensing issues and potential PME measures. Additionally, FERC requires that licensees cooperate with local, State, and federal agencies regarding lands within the study area. Initially approved in July of 2002, this study is anticipated to be finalized by DWR in 2004.

1.1.2 Study Area

The study area includes Lake Oroville, the lands and waters within and adjacent to the Project boundary, and adjacent (within ¼ mile of the Project boundary) lands, facilities, and areas with a clear Project nexus.

1.2 DESCRIPTION OF FACILITIES

The Oroville Facilities were developed as part of the State Water Project (SWP), a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants. The main purpose of the SWP is to store and distribute water to supplement the needs of urban and agricultural water users in Northern California, the San Francisco Bay area, the San Joaquin Valley, and Southern California. The Oroville Facilities are also operated for flood control and power generation, to improve water quality in the Delta, enhance fish and wildlife, and provide recreation.

FERC Project No. 2100 encompasses 41,100 acres and includes Oroville Dam and Reservoir, three power plants (Hyatt Pumping-Generating Plant, Thermalito Diversion Dam Power Plant, and Thermalito Pumping-Generating Plant), Thermalito Diversion Dam, the Feather River Fish Hatchery and Fish Barrier Dam, Thermalito Power Canal, Oroville Wildlife Area (OWA), Thermalito Forebay and Forebay Dam, Thermalito Afterbay and Afterbay Dam, transmission lines, and a relatively large number of recreational facilities. An overview of these facilities is provided in Figure 1.2-1. Oroville Dam, along with two small saddle dams, impounds Lake Oroville, a 3.5-million-acre-foot (maf) capacity storage reservoir with a surface area of 15,810 acres at its maximum normal operating level of 900 feet above mean sea level (msl).

The hydroelectric facilities have a combined licensed generating capacity of approximately 762 megawatts (MW). The Hyatt Pumping-Generating Plant is the largest of the three power plants with a capacity of 645 MW. Water from the six-unit

underground power plant (three conventional generating and three pumping-generating units) is discharged through two tunnels into the Feather River just downstream of Oroville Dam. The plant has a generating and pumping flow capacity of 16,950 cubic feet per second (cfs) and 5,610 cfs, respectively. Other generation facilities include the 3-MW Thermalito Diversion Dam Power Plant and the 114-MW Thermalito Pumping-Generating Plant.

Thermalito Diversion Dam, four miles downstream of the Oroville Dam, creates a tail water pool for the Hyatt Pumping-Generating Plant and is used to divert water into the Thermalito Power Canal. Thermalito Diversion Dam Powerplant is a 3-MW power plant located on the left abutment of the diversion dam. The power plant releases a maximum of 615 cfs of water into the river.

The Thermalito Power Canal is a 10,000-foot-long channel designed to convey generating flows of 16,900 cfs to the Thermalito Forebay and pump-back flows to the Hyatt Pumping-Generating Plant. Thermalito Forebay is an off-stream regulating reservoir for the Thermalito Pumping-Generating Plant. The Thermalito Pumping-Generating Plant is designed to operate in tandem with the Hyatt Pumping-Generating Plant and has generating and pump-back flow capacities of 17,400 cfs and 9,120 cfs, respectively. When in generating mode, the Thermalito Pumping-Generating Plant discharges into Thermalito Afterbay, which is contained by a 42,000-foot-long earthfill dam. The Afterbay is used to release water into the Feather River downstream of the Oroville Facilities, and helps regulate the power system, provides storage for pump-back operations, provides recreational opportunities, and provides local irrigation water. Several local irrigation districts receive Lake Oroville water via the Afterbay.

The Fish Barrier Dam is downstream of the Thermalito Diversion Dam and immediately upstream of the Feather River Fish Hatchery. The flow over the dam maintains fish habitat in the low flow channel (LFC) of the Feather River between the dam and the Thermalito Afterbay outlet, and provides attraction flow for the hatchery. The hatchery is an anadromous fish hatchery intended to compensate for salmon and steelhead spawning grounds made unreachable by construction of Oroville Dam. Hatchery facilities have a production capacity of 10 million fall-run salmon, 5 million spring-run salmon, and 450,000 steelhead annually (pers. comm., Kastner 2003). However, diseases have occasionally reduced hatchery production in recent years.

The Oroville Facilities support a wide variety of recreational opportunities. These opportunities include boating (several types), fishing (several types), fully developed and primitive camping (including boat-in and floating sites), picnicking, swimming, horseback riding, hiking, off-road bicycle riding, wildlife watching, and hunting. There are also visitor information sites with cultural and informational displays about the developed facilities and the natural environment. There are major recreation facilities at Loafer Creek, Bidwell Canyon, Spillway, Lime Saddle, and the Thermalito Forebay. Lake Oroville has two full-service marinas, five car-top boat launch ramps, 10 floating

campsites, and seven two-stall floating toilets. There are also recreation facilities at the Lake Oroville Visitors Center, the Thermalito Diversion Pool, the Thermalito Afterbay, and OWA.

The OWA comprises approximately 11,000 acres west of Oroville that is managed for wildlife habitat and recreational activities. It includes Thermalito Afterbay and surrounding lands (approximately 6,000 acres) along with 5,000 acres adjoining the Feather River. The 5,000-acre area is adjacent to or straddles 12 miles of the Feather River, and includes willow- and cottonwood-lined ponds, islands, and channels. Recreation areas include dispersed recreation (hunting, fishing, and bird watching), plus recreation at developed sites, including Monument Hill DUA, model airplane grounds, and three boat launches on the afterbay and two on the river, and two primitive camping areas. The California Department of Fish and Game's (DFG) habitat enhancement program includes a wood duck nest-box program and dry-land farming for nesting cover and improved wildlife forage. Limited gravel extraction also occurs in a few locations.

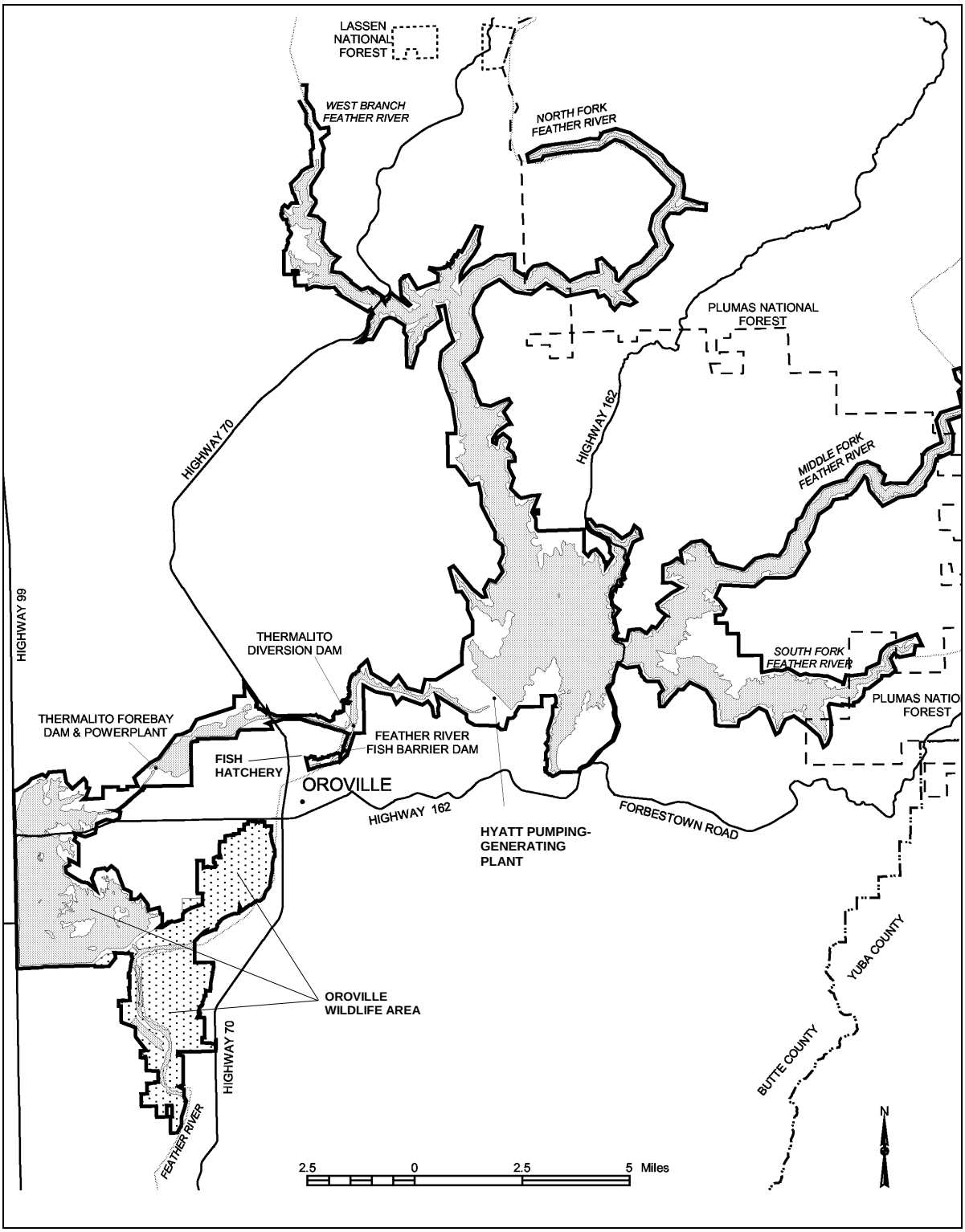

Figure 1.2-1. Oroville Facilities FERC Project 2100 boundary.

1.3 CURRENT OPERATIONAL CONSTRAINTS

Operation of the Oroville Facilities varies seasonally, weekly, and hourly, depending on hydrology and the objectives that the California Department of Water Resources (DWR) is trying to meet. Typically, releases to the Feather River are managed to conserve water while meeting a variety of water delivery requirements, including flow, temperature, fisheries, diversion, and water quality. Lake Oroville stores winter and spring runoff for release to the Feather River as necessary for project purposes. Meeting the water supply objectives of the SWP has always been the primary consideration for determining Oroville Facilities operation (within the regulatory constraints specified for flood control, instream fisheries, and downstream uses). Power production is scheduled within the boundaries specified by the water operations criteria noted above. Annual operations planning is conducted for multiyear carryover storage. The current methodology is to retain half of the Lake Oroville storage above a specific level for subsequent years. Currently, that level has been established at 1.0 maf; however, this does not limit drawdown of the reservoir below that level. If hydrology is drier or requirements greater than expected, additional water could be released from Lake Oroville. The operations plan is updated regularly to reflect forecast changes in hydrology and downstream operations. Typically, Lake Oroville is filled to its maximum operating level of 900 feet above msl in June and then lowered as necessary to meet downstream requirements, to a minimum level in December or January (approximately 700 msl). During drier years, the reservoir may be drawn down more and may not fill to desired levels the following spring. Project operations are directly constrained by downstream operational demands and flood management criteria as described below.

1.3.1 Downstream Operation

An August 1983 agreement between DWR and DFG entitled *Agreement Concerning the Operation of the Oroville Division of the State Water Project for Management of Fish & Wildlife* (DWR and DFG 1983) sets criteria and objectives for flow and temperatures in the low-flow channel and the reach of the Feather River between Thermalito Afterbay and Verona. This agreement: (1) establishes minimum flows between the Thermalito Afterbay outlet and Verona that vary by water year type; (2) requires flow changes under 2,500 cfs to be reduced by no more than 200 cfs during any 24-hour period (except for flood management, failures, etc.); (3) requires flow stability during the peak of the fall-run Chinook salmon spawning season; and (4) sets an objective of suitable temperature conditions during the fall months for salmon and during the spring/summer for shad and striped bass.

1.3.1.1 Instream Flow Requirements

The Oroville Facilities are operated to meet minimum flows in the lower Feather River as established by the 1983 agreement (see above). The agreement specifies that Oroville Facilities release a minimum of 600 cfs into the Feather River from the Thermalito Diversion Dam for fisheries purposes. This is the total volume of flows from

the diversion dam outlet, the diversion dam power plant, and the Feather River Fish Hatchery pipeline.

Generally, the instream flow requirements below Thermalito Afterbay are 1,700 cfs from October through March, and 1,000 cfs from April through September. However, if runoff for the previous April–July period is less than 1,942,000 acre-feet (af) (i.e., the 1911–1960 mean unimpaired runoff near Oroville), the minimum flow can be reduced to 1,200 cfs from October to February, and 1,000 cfs for March. A maximum flow of 2,500 cfs is not exceeded from October 15 through November 30 to prevent spawning in overbank areas that might become de-watered.

1.3.1.2 Temperature Requirements

The Diversion Pool provides the water supply for the Feather River Fish Hatchery. The hatchery temperature objectives are 52°F for September, 51°F for October and November, 55°F for December through March, 51°F for April through May 15, 55°F for last half of May, 56°F for June 1–15, 60°F for June 16–August 15, and 58°F for August 16–31. In April through November, a temperature range of plus or minus 4°F is allowed for objectives.

There are several temperature objectives for the Feather River downstream of the Thermalito Afterbay outlet. During the fall months, after September 15, the temperatures must be suitable for fall-run Chinook salmon. From May through August, the temperatures must be suitable for shad, striped bass, and other fish.

National Oceanic and Atmospheric Administration Fisheries National Marine Service (NOAA Fisheries) has also established an explicit criterion for steelhead trout and spring-run Chinook salmon, memorialized in a biological opinion on the effects of the Central Valley Project and SWP on Central Valley spring-run Chinook and steelhead. As a reasonable and prudent measure, DWR attempts to control water temperature at Feather River mile 61.6 (Robinson's Riffle in the low-flow channel) from June 1 through September 30. This measure attempts to maintain water temperatures less than or equal to 65°F on a daily average. The requirement is not intended to preclude pump-back operations at the Oroville Facilities needed to assist the State of California with supplying energy during periods when the California Independent System Operator (ISO) anticipates a Stage 2 or higher alert.

The hatchery and river water temperature objectives sometimes conflict with temperatures desired by agricultural diverters. Under existing agreements, DWR provides water for the Feather River Service Area contractors. The contractors claim a need for warmer water during spring and summer for rice germination and growth (i.e., minimum 65°F from approximately April through mid-May, and minimum 59°F during the remainder of the growing season), though there is no explicit obligation for DWR to

meet the rice water temperature goals. However, to the extent practical, DWR does use its operational flexibility to accommodate the Feather River Service Area contractors' temperature goals.

1.3.1.3 Water Diversions

Monthly irrigation diversions of up to 190,000 af (July 2002) are made from the Thermalito Complex during the May–August irrigation season. The total annual entitlement of the Butte and Sutter County agricultural users is approximately 1.0 maf. After these local demands are met, flows into the lower Feather River (and outside of the Project 2100 boundary) continue into the Sacramento River and into the Sacramento-San Joaquin Delta. In the northwestern portion of the Delta, water is pumped into the North Bay Aqueduct. In the south Delta, water is diverted into Clifton Court Forebay where the water is stored until it is pumped into the California Aqueduct.

1.3.1.4 Water Quality

Flows through the Delta are maintained to meet Bay-Delta water quality standards arising from DWR's water rights permits. These standards are designed to meet several water quality objectives such as salinity, Delta outflow, river flows, and export limits. The purpose of these objectives is to attain the highest reasonable water quality, considering all demands being made on the Bay-Delta waters. In particular, they protect a wide range of fish and wildlife including Chinook salmon, Delta smelt, striped bass, and the habitat of estuarine-dependent species.

1.3.2 Flood Management

The Oroville Facilities are an integral component of the flood management system for the Sacramento Valley. During the wintertime, the Oroville Facilities are operated under flood control requirements specified by the U.S. Army Corps of Engineers (USACE). Under these requirements, Lake Oroville is operated to maintain up to 750,000 af of storage space to allow for the capture of significant inflows. Flood control releases are based on the release schedule in the flood control diagram or the emergency spillway release diagram prepared by the USACE, whichever requires the greater release. Decisions regarding such releases are made in consultation with the USACE.

The flood control requirements are an example of multiple use of reservoir space. When flood management space is not required to accomplish flood management objectives, the reservoir space can be used for storing water. From October through March, the maximum allowable storage limit (point at which specific flood release would have to be made) varies from about 2.8 maf to 3.2 maf to ensure adequate space in Lake Oroville to handle flood flows. The actual encroachment demarcation is based on a wetness index, computed from accumulated basin precipitation. This allows higher

levels in the reservoir when the prevailing hydrology is dry. When the wetness index is high in the basin (i.e., high potential runoff from the watershed above Lake Oroville), required flood management space is at its greatest to provide the necessary flood protection. From April through June, the maximum allowable storage limit is increased as the flooding potential decreases, which allows capture of the higher spring flows for use later in the year. During September, the maximum allowable storage decreases again to prepare for the next flood season. During flood events, actual storage may encroach into the flood reservation zone to prevent or minimize downstream flooding along the Feather River.

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2.0 NEED FOR STUDY

Specific tasks of Relicensing Study L-2 – *Land Management* are required by FERC under 18 CFR 4.51 (6)(iii) as part of the relicensing process. The purpose of L-2 is to research, describe, and graphically display the management direction of study area lands and identify the entities that are responsible for managing those lands. FERC requires that DWR understand land management directives and the entities which regulate them in order to appropriately manage Project lands and operations. This also helps DWR plan for future activities that may influence lands, such as PM&E measures proposed by work groups.

Existing land management actions by jurisdictions and agencies in the study area is the baseline condition that will be used by DWR decision-making regarding relicensing issues and potential PME measures. Additionally, FERC requires that licensees cooperate with local, State, and federal agencies regarding lands adjacent to the study area.

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3.0 STUDY OBJECTIVE(S)

3.1 OBJECTIVES OF STUDY INFORMATION

The objectives of this Report include identifying the entities that manage the lands within the study area and the policies and objectives used to manage those lands. This information will also be used in the Preliminary Draft Environmental Assessment (PDEA) to evaluate the effects of alternatives on the management of land within and abutting the Project boundary.

There are no known studies that address the issue of land management for the entire study area. Information from entities that have complied land management data related to the study area, such as Butte County, the City of Oroville, DWR, DPR, DFG, USFS, and BLM has been gathered and utilized as part of this study.

3.1.1 Other Studies

Preparation of Draft Relicensing Study L-2 *Land Management* required extensive coordination with other studies that have or are being prepared as part of the Project relicensing effort. The Report has and will require coordination with Relicensing Studies L-1 – *Land Use Report*, L-3 – *Comprehensive Plans Evaluation*, L-4 – *Aesthetic/Visual Resources Report*, R-4 – *Relationship Assessment of Fish/Wildlife Management and Recreation*, R-5 – *Assessment of Recreation Areas Management*, T-6 – *Interagency Wildlife Management Coordination and Wildlife Plan Development*, F-5 – Project *Effect of FERC Project Fisheries Management Plans on a Balanced Fishery of Resident and Anadromous Fish*, and C-3 – *Cultural Resource Management*.

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4.0 METHODOLOGY

4.1 STUDY DESIGN

This study consisted of evaluating land management responsibilities and plans within the study area, interviewing planners and managers from relevant land and resource management entities, and reviewing relevant literature.

FERC has identified relevant comprehensive plans to be considered during Project review. Other relevant land use oriented comprehensive and resource management plans that were known to staff or identified by the LUWG were also obtained and reviewed. Resource Area Managers (RAMs) from other work groups identified and described additional relevant land management comprehensive or resource management plans that were included in this evaluation. Relevant policy and management directives from these plans were evaluated and used as the basis for questionnaires with land managers.

Interviews were conducted with personnel from land management agencies and jurisdictions to assess whether management plans were up-to-date or if changes to plans were anticipated, and to identify new plans or policies. Planned and/or potential development activities of the entity that could influence the management direction of lands within the study area were reported. In addition, land managers identified the current challenges they face (such as budgetary, staffing, coordination, conflicts) which may influence existing and/or potential study area land management. Land management issues were also solicited from the Environmental and Land Use and Aesthetics Work Group members. From these discussions, lands within the study area were evaluated and their land management directives described.

Maps were developed to display land management responsibilities and management patterns within the study area. GIS data from sources such as Butte County, USFS, DWR, and BLM, along with information from hard copy maps, were added to a GIS database to allow the research team to develop management maps of the entire study area. The maps display the lands, their associated management entities, management classifications, and overall management direction. After the preliminary maps were completed, management agency staff and Environmental and LUWG members reviewed them to ensure that they were up-to-date and accurate.

Researchers carrying out the PDEA will use this data to conduct an opportunity and constraints analysis to evaluate the cause and effect of land management limitations within the study area. This information could also be used to create approaches for resolving land management conflicts associated with the Project in the future.

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5.0 LAND MANAGEMENT IN THE STUDY AREA

5.1 INTRODUCTION

This chapter describes the public and private entities that manage lands within the study area, identifies the management direction of these lands according to land use and resource management plans, and provides a discussion of the existing management practices of each responsible agency.

Lands, facilities, and recreational interests in the study area are managed and administered by a number of State and federal agencies or departments. The State of California's Resources Agency oversees four departments that have direct management interests within the study area: DWR, DPR, DFG, and DBW. (Because the DBW oversees water activities rather than land management in the study area, the DBW management responsibilities are not specifically addressed in this report. Refer to Resource Report R-4 for additional information on the DBW management conditions.) Federal agencies with land management interests within the study area include USFS and BLM. The management responsibilities of each entity and the property conditions are detailed in a series of deeds, agreements, and transfers between the agencies involved. Figure 5.1-1 provides a summary of the existing public facilities and jurisdictional boundaries within the Oroville vicinity for the purpose of this discussion.

Table 5.1-1 provides a summary of the amount of land managed by each entity within both the Project boundary and the study area. Figure 5.1-2 illustrates the geographical location of these areas by land managers. Prior to 1961, the DWR managed approximately half of the 70,000-acre study area on behalf of the State of California, all of which is located within the Project boundary. In 1961, the California Legislature passed the Davis-Dolwig Act (State Water Code Sections 11900-11925), which made the DWR responsible for acquiring land and planning for recreation and fish and wildlife enhancement as part of the SWP and directed DWR to transfer certain land management responsibilities to other state departments. The State of California holds fee-title ownership to all State lands within the Project boundary. DWR is considered by FERC to be the “maintaining” or “controlling” agency of these lands.

The Davis-Dolwig Act also identified three other State stakeholders: DPR, DFG, and DBW. DPR and DFG have land management authority within the study area. To fulfill the Act’s directive, DWR transferred management rights of the majority of State-owned land within the study area to these agencies under a “transfer of control and possession,” a legal document that gives the receiving agency an easement to carry out management and maintenance responsibilities. In total, DWR transferred recreation interests of approximately 23,000 acres to DPR and approximately 12,000 acres to DFG. These lands primarily constitute the LOSRA and Oroville Wildlife Area (OWA), respectively. The transfer of these interests is in addition to and consistent with the State-wide management responsibilities of the DPR and DFG. In general, DPR is

charged with State-wide management of facilities of the State park system and DFG is charged with state-wide management of recreation facilities associated with fish and wildlife resources and habitats. (Several exceptions to the general state agency management roles occur within the study area and are discussed further in Section 5.3.)

As a result of the transactions that occurred pursuant to the Davis-Dolwig Act, DWR now has primary management responsibilities for approximately 3 percent of the study area, including several recreation facilities at the Thermalito Afterbay. Despite the DPR and DFG management and maintenance responsibilities, DWR does bear the ultimate responsibility under the current FERC license for ensuring funding, development, and management of current and future recreation facilities. In addition, the Davis-Dolwig Act requires DWR to plan for and acquire land for recreation in conjunction with all State water projects. In keeping with its responsibility, DWR works with DPR and DFG to provide for recreational opportunities and funding throughout the study area. In doing so, agency management roles occasionally overlap. Section 5.3 discusses the relationship between these agencies in detail.

Table 5.1-1. Summary of public entity land management.

	ACRES OF MANAGEMENT			
Public Entities	Inside Project Boundary	Inside study area/Outside Project boundary	Total	Percent of total
Federal				
USFS*	2,039	2,755	4,794	7%
BLM	3,852	2,021	5,873	8%
Bureau of Indian Affairs (BIA)	0	0	0	0%
Other	0	0	0	0%
Subtotal Federal (Public)	5,891	4,776	10,667	
State				
DWR	1,954	252	2,206	3%
DPR	22,069**	873	22,942	32%
DFG	11,228	838	12,066	17%
Other	0	0	0	0%
Subtotal State (Public)	35,251	1,963	37,214	
Local Jurisdictions	Private/Local Lands Subject to Local Land Management			
Butte County	0	21,574	21,574	31%
City of Oroville	0	1,147	1,147	2%
Subtotal Local (Private)	0	22,721	22,721	
TOTAL	41,142	29,460	70,602**	100%

Source: Butte County 2003, staff review of acreage totals from USFS, BLM, DWR, DPR, DFG, and City of Oroville, EDAW 2003.
*Includes all management authority except for recreation and law enforcement, which was transferred to DPR.
**Acreage summaries under evaluation.

Insert Figure 5.1-1. Oroville Relicensing study area

Insert back of Figure 5.1-1. Oroville Relicensing study area

insert Figure 5.1-2 . Land Management Responsibility in the Oroville Relicensing study area by Jurisdiction

Back of Figure 5.1-2 Land Management Responsibility in the Oroville Relicensing study area by Jurisdiction

DPR and DFG are responsible for managing approximately 32 and 17 percent of the study area, respectively (Table 5.1-1). As indicated in Figure 5.1-2, other public entities manage significantly less land within the study area. The federal agencies, USFS and BLM, are responsible for managing approximately 7 and 8 percent of the lands within the study area, respectively. The remaining 33 percent, which is located outside of the Project boundary, is in private ownership. These lands are located within Butte County and the City of Oroville and receive land management direction under County and/or City zoning.

The following sections provide a detailed overview of the existing land management conditions within the Project boundary and study area by management entity. A description of the primary land managers within the study area, illustrations of geographic locations and acreages of managed lands, and the direction identified in existing resource management prescriptions or zoning districts is provided.

5.2 LAND MANAGED BY FEDERAL AGENCIES

The federal government owns approximately 11,000 acres, or approximately 16 percent, of the total study area. (A detailed discussion of land ownership is provided in Resource Report L-1.) USFS and BLM combined manage approximately 11,000 acres of land, which is approximately 15 percent of the total study area (Figure 5.1-2). National Forest System lands are part of the Plumas and Lassen National Forests. BLM lands consist of scattered, noncontiguous parcels that are managed under the direction of the Redding Resource Management Plan (RRMP). Federal agency management direction and conditions over study area lands are described in detail below.

5.2.1 USFS Managed Lands

The USFS, an agency of the United States Department of Agriculture, operates with the mission: “To sustain the health, diversity, and productivity of the Nation’s forests and grasslands to meet the needs of present and future generations” (USFS Website). The USFS manages approximatley 2,600 acres of study area land located in the Upper North Fork, the Middle Fork, and South Fork of the Feather River. Approximately 95 percent of these lands are within the Plumas National Forest and the remainder, located in the Upper North Fork arm of Lake Oroville, fall within the Lassen National Forest (Figure 5.1-2).

5.2.1.1 USFS Management Direction

As mentioned previously, National Forest System lands in the study area are part of the Plumas and Lassen National Forests. Both Forests are managed under the 1988 Plumas National Forest Land and Resource Management Plan (LRMP) (USFS 1988). In addition, management of these lands is influenced by the more recent 2004 Sierra

Nevada Forest Plan Amendment (SNFPA). The LRMP establishes the management goals and policies that direct the management of the Forest over 10 to 15 years (the "planning period") and helps meet long term objectives over a 50 year period (the "planning horizon"). The LRMP also prescribes management practices for specified areas and time periods needed to obtain these objectives. The policies for the lands in the areas near the Project primarily emphasize resource conservation, provision of high quality recreational opportunities, and protection of visual resources.

In general, most of the National Forest System lands within the study area are located within the Feather River Ranger District of the Plumas National Forest. These lands have minimal management direction due to the unproductive or unsuitable nature of these properties (USFS 1988), although several exceptions exist within each of the three river branches. In the Upper North Fork, a small portion of lands are to be managed for intensive timber production. In the Middle Fork, within or in close proximity to the Feather Falls Scenic Area, lands are to be managed as special interest areas and have been withdrawn from production. A small portion of National Forest System lands along the South Fork are prescribed for visual retention and are to be managed for low intensity timber production (Figure 5.2-1A through 5.2-1C).

The LRMP has assigned "Management Areas" to all USFS lands, including lands within the study area and within the Project boundary. There are four Management Areas for Forest lands near the Project. Each Management Area has general guidelines for achieving resource objectives along with standards and guidelines for managing the various resources such as recreation, visual resources, wildlife, and timber. Lands within each Management Area have been assigned a management prescription, which prescribes the specific management direction for all resources and land within the Management Area.

Each management prescription has a different management emphasis. Along with specific standards and guidelines, the management prescriptions also contain general guidelines for achieving resource objectives within the Management Area. Figures 5.2-1A through 5.2-1C illustrate the USFS management direction for these properties by Management Area and management prescriptions.

As indicated in Figure 5.2-1A through 5.2-1C, the French Creek Management Area overlaps with the study area along the northeastern bank of the Upper North Fork near the confluence of French Creek with the Upper North Fork. The Galen Management Area overlaps with the study area along the southern bank of the Upper North Fork near the confluence with French Creek, then along both banks of the Upper North Fork from the confluence of French Creek to the National Forest boundary approximately 4.5 miles downstream. National Forest System lands located in the far eastern reaches of

Insert Figure 5.2-1A. USFS Management Prescription in the Oroville Relicensing study area
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Insert Figure 5.2-1B. USFS Management Prescription in the Oroville Relicensing study area
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Insert Back of 5.2-1B. USFS Management Prescription in the Oroville Relicensing study area
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Insert Figure 5.2-1C. USFS Management Prescription in the Oroville Relicensing study area
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Insert Back of 5.2-1C. USFS Management Prescription in the Oroville Relicensing study area
11x17

the Middle Fork with proximity to the Feather Falls Scenic Area are administered within the Kellogg Management Area. The Feather Falls Management Area also overlaps with the study area proximate to the Feather Falls Scenic Area, as well as National Forest System lands outside the Project boundary along the South Fork. The Middle Fork Feather Wild and Scenic River also influences the management direction of National Forest System lands. Refer to Figures 5.2-1A through 5.2-1C for a visual depiction of the location of these areas in context of the Project boundary.

These Management Areas, and their standards and policies as they relate to Lake Oroville, are summarized as follows:

French Creek Management Area

The French Creek Management Area is located between the North Fork of the Feather River, the Pulga-Four Trees Road, and the Oroville-Quincy Road. This Management Area is primarily within the watershed of French Creek, which flows into the North Fork of the Feather River within Lake Oroville. Appendix A lists the standards and guidelines for the French Creek Management Area and Management Prescriptions, as applicable to the Project.

Galen Management Area

The Galen Management Area extends easterly from Big Bend on the North Fork to the canyon of the Middle Fork of the Feather River. This 8,719-acre Management Area is bounded on the north by a segment of the North Fork Feather River and the Oroville-Quincy Road through the Brush Creek Work Center and on the south by the Forest boundary. Instability is a problem in the steep North Fork Canyon. Dispersed recreation is light due to the lack of recreational attractions and abundance of private lands. Appendix A lists the standards and guidelines for the Galen Management Area and Management Prescriptions, as applicable to the Project.

Kellogg Management Area

The Kellogg Management Area is a 1 to 2 mile wide corridor along the north side of the Middle Fork of the Feather River Canyon from Oroville Reservoir to near Bear Creek. Appendix A lists the primary standards and guidelines for the Kellogg Management Area and Management Prescriptions.

Feather Falls Management Area

The Feather Falls Management Area within the FERC study area extends from the Feather Falls Scenic Area in the Middle Fork south to National Forest System lands along the South Fork. Appendix A lists the primary standards and guidelines for Feather Falls Management Area and Management Prescriptions.

USFS and DPR have an agreement in place concerning management of National Forest System lands located within the Project boundary. The agreement, dated March 16, 1978, allows DPR to conduct law enforcement activities on National Forest land, while USFS retains all other authorities. In the agreement, USFS "transferred interest" in National Forest System lands "within project boundaries shown in Exhibit K of the FERC license No. 2100 to permit the Department of Parks and Recreation to use, and protect said lands in a manner necessary to administer them for recreation purposes and, to the extent permissible, to enforce all applicable laws and regulations thereon." USFS is not interested in changing or terminating the agreement at this time, but will reevaluate the agreement during the next LRMP revision (pers. comm., Taylor 2004).

5.2.1.2 Existing USFS Management Conditions

Many of the existing Forest lands within the study area are unproductive or unsuitable for timber harvesting due to difficult terrain and/or access. These areas receive minimal management activity (USFS 1988). As a result, the majority of these National Forest System lands were managed in the past as defacto resource conservation lands. Under current National Forest fuel management direction, these lands are being considered for management if they could be a threat to nearby urbanized areas. This direction is also the result of the lack of financial resources needed to actively implement the LRMP (pers. comm., Taylor 2003).

The study area contains small parcels of scattered, noncontiguous USFS lands within the French Creek Mangement Area (in the Upper North Fork) and within the Feather Falls Management Area (in the South Fork) that are prescribed for timber production. Activities in these areas primarily include fishing, mining, and a limited amount of primitive camping (USFS 1988). Recreation in areas falling within the LOSRA boundary are managed by DPR (pers. comm., Elliot 2003).

The USFS does not actively manage facilities or activities on most lands within the study area. Currently, any development planned in conjunction with the Oroville Project on National Forest System lands, including construction of any facilities or infrastructure, must be approved by USFS prior to implementation (pers. comm., Humphreys 2003). One portion of the study area that does receive active USFS management is the Feather Falls Scenic Area. Funded by the National Forest System Funds, the USFS maintains roads, trails and campgrounds within the study area (pers. comm., Taylor 2003).

USFS provides law enforcement to address illegal activities that take place on National Forest System lands within the study area. Some of these activities include illegal dumping of trash, debris from drug-production labs, as well as vandalism of cultural resource sites. At times, law enforcement is made difficult by the geographic extent of federal lands. Fire prevention personnel make contact with forest visitors during the fire

season and assist with other public service activities as needed (pers. comm., Taylor 2003).

5.2.2 BLM Managed Lands

The BLM, an agency of the United States Department of the Interior, operates with the mission "to sustain the health, diversity and productivity of the public lands for the use and enjoyment of present and future generations." BLM manages approximatley 2,000 acres of land in scattered, noncontiguous parcels located along the West Branch, the Lower North, Middle, and South Forks of the Feather River outside of the Project boundary but within the study area. Of the total acres of BLM administered public lands, approximately half are submerged under Lake Oroville. The rest is located above the waters of the lake (Figure 5.2-2).

5.2.2.1 BLM Management Direction

BLM is responsible for scattered lands managed under the direction of the 1993 Redding Resource Management Plan (RRMP). The RRMP directs the management of public lands and federal mineral estates that are administered by the BLM within the Redding Resource Area (RRA) of north central California. Lands managed by BLM in and around the study area are designated as "undeveloped public lands."
The four main land use issues addressed in the RRMP are land tenure adjustment, recreation management, access, and forest management.

The RRA consists of more than a thousand individual parcels of public land scattered through five counties in northern California. To adequately address management issues in such a large geographic area, the RRA is divided into seven geographically distinct Management Areas: Scott Valley, Klamath, Trinity, Shasta, Sacramento River, Ishi, and Yolla Bolly. The study area is located within the Ishi Management Area.

The Ishi Management Area is further divided into seven sub-areas: Battle Creek, Deer Creek, Forks of Butte Creek, Minnehaha Mine, Upper Ridge Nature Preserve, Baker Cypress, and the Remainder of the Management Area. The study area lands are located within the Remainder of the Management Area sub-area, which consists of scattered BLM lands. Within each sub-area are numbered resource condition objectives which indicate how lands in the sub-areas are to be managed. The resource condition objectives for the Remainder of the Management Area sub-area that apply to the Project are listed below (by number as listed in the RRMP).

(1) Enhance the resource management efficiency and public service mission of local, State, and federal agencies via transfer of specific public lands from BLM.

(2) Enhance the ability to acquire high value resource lands within the RRA by disposal of scattered public land interests within the Ishi Management Area;
(5) Transfer via the Recreation and Public Purpose Act (R&PP) or exchange to a qualified State/local agency or non-profit organization administrative responsibility of six parcels of public land encompassing approximately 800 acres in the West Branch Feather River (between Magalia Reservoir and Lake Oroville);
(7) Transfer via exchange or R&PP to the State of California all surface and submerged public lands, which encompasses approximately 6,900 acres within and adjacent to the LOSRA (approximately 3,900 acres within LOSRA and 3,000 acres immediately adjoining LOSRA are available for transfer to the State of California). All lands identified by California or BLM as excess to park needs will be offered for exchange to any party after two years from approval of the Final RMP; and
(8) Two hundred acres of public land near the Middle Fork Feather River are suitable for community development purposes as a reservation for federally recognized Native American tribe(s). If congressional support is unavailable, offer for exchange to any party after five years from the approval of the Final RMP.

BLM lands within the study area are designated for transfer to the State of California to "Enhance the resource management efficiency and public service mission of local, State, and federal agencies via transfer of specific public lands from BLM" (BLM 1993). Transfer is planned to occur via an application under the R&PP of 1926 (as amended) or via an exchange of title for surplus State of California lands based on an appraisal of fair market value. Interest exists in transferring the surplus BLM public lands via federal legislation since the acreage involved exceeds the annual limit permissible under the R&PP Act. BLM began this process by transferring roughly 300 acres to the State under the R&PP (pers. comm., Ritter 2003).

No statutes contravene the management decision to transfer the surplus federal lands. Prior to transfer under R&PP, exchange or, legislative mandate, BLM must comply with the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), the National Historic Preservation Act (NHPA), and the American Indian Religious Freedom Act (AIRFA), as appropriate, to: disclose the environmental consequences of the action, consider impacts to critical habitat or special status species, assess effects to cultural resources considered eligible for inclusion in the National Register of Historic Places and provide for free expression of traditional religious practices respectively. Some or all of these requirements could be lessened or waived, e.g. resource inventories, depending on agreement(s) between the State of California and the United States or the specifics of legislation, if applicable, regarding the proposed transfer(s).

Insert Figure 5.2-2

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5.2.2.2 Existing BLM Management Conditions

In general, the BLM lands in the study area contain semi-primitive roads with views of Lake Oroville. Surplus public lands in the study area receive very little active management by BLM (BLM 1993). Recreation use of these lands is managed by DPR as part of the LOSRA (pers. comm., Williams 2003). No management agreements between BLM and the State agencies exist within the study area. The lands within the Project boundary, primarily within the LOSRA, have been withdrawn from entry under a variety of public land laws due to a reservation for the reservoir project (pers. comm., Berg 2003).

At an operational level, BLM has prioritized the following three management objectives for lands in and near the study area (pers. comm., Berg 2003):

1. Identify what lands are of specific interest to the State of California within the study area;
2. Design the mechanism(s) to effect transfer of surplus federal lands to the State of California; and
3. Complete transfer.

BLM has expressed its need to surplus properties with public agencies. DPR and the U.S. Bureau of Indian Affairs (on behalf of four federally recognized tribes) have submitted applications to the BLM for land transfer sites within the study area in the vicinity of Stringtown Mountain along the South Fork of the Feather River. This area is of great cultural interest to the four recognized tribes in the Oroville area.

Cultural issues are the largest management issues facing the BLM today (pers. comm., Matzat 2003). As previously mentioned, several public and private groups are interested in the Martin Cemetery and Stringtown Mountain vicinity where cultural resources are known to exist. Martin Cemetery is an approximately 10 acre parcel located within the NE ¼ of the SE ¼ of Section 35, T20N, R5E (MDBM) and is an historic and contemporary graveyard. The cemetery and sacred sites proximate to Stringtown Mountain are used by local Koncow-Maidu tribe descendents (pers. comm., Emery 2003; Berg 2003).

The Redding Field Office employs two rangers that are responsible for covering the entire RRA. Two specific security issues associated with BLM public lands have arisen. The agency attempts to respond to service calls associated with 1) trespassing and illegal dumping on BLM lands within the study area, and 2) the raiding of known sacred Koncow-Maidu tribal sites. However, the agency's ability to respond is compromised by the distance of these lands to field offices and existing work load demands (pers. comm., Berg 2003).

5.3 LAND MANAGED BY STATE AGENCIES

The State of California manages approximately 37,000 acres of land in the study area, or 52 percent of the total study area (see Table 5.1-1). DWR, DPR and DFG manage lands, facilities, and recreational interests in this area. Pursuant to the 1961 Davis-Dolwig Act (State Water Code Sections 11900-11925), the properties and management responsibilities of each agency are detailed in a series of deeds, agreements, and transfers between the agencies (refer to Section 5.1 for further detail).

DWR transferred approximately 23,000 acres of recreation interests to DPR and approximately 12,000 acres of fish and wildlife management interests to DFG to fulfill the mandate of the Davis-Dolwig Act. These lands primarily constitute the LOSRA and Oroville Wildlife Area (OWA) respectively. DPR is charged with designing, constructing, operating, and maintaining public recreation facilities, while DFG manages fish and wildlife resources. DWR currently plans and manages public recreation and fish and wildlife preservation and enhancement in connection with State water projects, including acquisition of all lands and location and construction of all works and project features so as to allow for fish and wildlife enhancement and recreational uses following completion of the Project.

The following sections summarize State departments' plans and information that pertains to the study area. Each department has developed management plans to guide management activities within the study area and beyond.

5.3.1 DWR Managed Lands

DWR manages approximatley 2,200 acres of land in noncontiguous parcels east of Oroville Dam and along the banks of the Thermalito Power Canal in specific areas inside and outside of the Project boundary. Figure 5.3-1 illustrates the locations of these lands and the facilities with which they are associated in the study area.

5.3.1.1 DWR General Management Direction

General Management Direction for State Water Project Facilities

The mission of DWR is "to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments." The following are summaries of DWR's major responsibilities (DWR website):

- Prepare and update the California Water Plan to guide development and management of the State's water resources.

Insert Figure 5.3-1 DWR Management Map

Back of Figure 5.3-1 DWR Management Map

- Plan, design, construct, operate, and maintain the SWP to supply good quality water for municipal, industrial, agricultural, and recreational uses and for fish and wildlife protection and enhancement.

- Protect and restore the Sacramento-San Joaquin Delta by controlling salinity and providing water supplies for Delta water users, planning long-term solutions for environmental and water use problems facing the Delta, and administering levee maintenance reimbursements and special flood control projects.

- Regulate dams, provide flood protection, and assist in emergency management to safeguard life and property by supervising design, construction, operation, and maintenance of more than 1,200 jurisdictional dams; encouraging preventive floodplain management practices; maintaining and operating Sacramento Valley flood control facilities; cooperating in flood control planning and facility development; and providing flood advisory information.

- Educate the public on the importance of water and its proper use; and collect, analyze, and distribute water-related information to the general public and to the scientific, technical, educational, and water management communities.

- Serve local water needs by providing technical assistance; cooperating with local agencies on water resources investigations; supporting watershed and river restoration programs; encouraging water conservation; exploring conjunctive use of ground and surface water; facilitating voluntary water transfers; and, when needed, operating a State drought water bank.

DWR manages lands within the Project boundary as a component of the SWP which provides water for municipal, industrial, agricultural, recreational, and environmental uses while meeting the six goals. Specific goals of the agency are guided by plans established to provide direction for Lake Oroville fisheries habitat and the recreational use of the LOSRA. DWR adopted the Lake Oroville Fisheries Habitat Improvement Plan in 1995 to improve fish habitat and establish a schedule for implementation. The Plan provides a template for long-term habitat enhancement plans for fisheries with the objective to increase the productivity of fisheries within specific areas of Lake Oroville, the Thermalito Forebay and Afterbay, and the Feather River.

In addition, DWR prepared the Amended Recreation Plan (ARP) in 1993 specifically for the LOSRA. This ARP is covered in further detail below.

Management Direction for the LOSRA

In compliance with the FERC Order of October 1, 1992, DWR prepared the ARP in 1993 as the recreation plan for the LOSRA. The ARP was adopted by the FERC Order

of September 22, 1994 and superseded the 1966 Plan, Bulletin 117-6. DWR developed the ARP for the LOSRA and other Project lands to address public concerns associated with the recreation development association with the Project. The 1993 ARP describes a number of improvements and the commitments of DWR to construct specific facilities and take actions to address the fisheries and recreation needs at the Project; additional improvements and actions deemed necessary by FERC were included in the September 22, 1994 Order. The 1993 ARP also detailed the time frame for the completion of additional proposed recreational facilities. DWR acknowledges in the ARP that as the licensee, they are responsible for funding specific improvements. The ARP describes the fish and wildlife resources, facilities, local area, user patterns, operation of LOSRA and OWA facilities, economic considerations, recreation plan, and the fisheries management plan.

The ARP acknowledges that recreation activities and preferences have changed over time (1966 to 1993). There is an increased demand for equestrian, bike, and hiking trails while the number of fishing licenses issued has decreased over time. Another finding was that use patterns in 1993 have changed due to low water levels and temporarily inaccessible or seasonally unusable facilities. The ARP puts forth recommendations for facility expansion and modification in light of these findings. These recommendations have since been implemented.

In terms of Lake Oroville fisheries, ARP goals include developing a multi-species fishery in Lake Oroville that makes optimum use of the available habitat and forage base while sustaining the existing fisheries above current levels. One of the management outcomes of this goal has been the designation of Lake Oroville as a “Trophy Black Bass Water” by the California Fish and Game Commission.

The ARP states that Lake Oroville recreational facilities must be responsive to fluctuating water levels, topography that restricts uses during low water, temperatures that deter use during the peak summer period, a highway system that is conducive to local or destination-type uses, and reasonable user costs. The facilities recently developed at Lake Oroville have taken these factors into consideration, while incorporating cost effective development focusing on areas that would receive high usage. For example, facilities around the Thermalito Afterbay (such as Monument Hill) have been developed to mitigate low pool elevations that restrict usage on Lake Oroville. Recreation facilities (Bidwell Canyon, Lime Saddle, Loafer Creek, and Spillway) have been upgraded to take into account periods of low pool elevations, such as by extending the length of boat ramps.

5.3.1.2 Existing DWR Management Conditions

Management of Oroville Facilities

DWR manages lands within the Project boundary for the operation of the Oroville Facilities of the SWP—including the Oroville Dam and Reservoir, Edward Hyatt Hydroelectric Powerplant, Thermalito Powerplant, Thermalito Diversion Dam and Powerplant, Thermalito Forebay and Afterbay, Fish Barrier Dam, and Thermalito Power Canal. DWR currently operates and manages the Oroville Facilities to maximize its benefit to the SWP, with the primary focus on water supply. The SWP was developed to conserve and distribute water to supplement the needs of urban and agricultural users throughout the State. Power produced by the Oroville Facilities helps meet power demands associated with water conveyance, reducing the need to purchase power and producing reliable power that is sold to the power grid to reduce the net cost of water delivery. The Oroville Facilities, designed and constructed by DWR in the 1960s, are a critical part of the SWP and provide significant water collection and storage, flood management, and power production capabilities.

DWR is also responsible for managing its Oroville Field Division-Civil Maintenance (OFD-CM) boat ramp site on Lake Oroville and on the Afterbay, as indicated on Figure 5.3-1 (pers. comm., Babb 2004).

Third-Party Leases

DWR promotes the active management of lands within the Project boundary. DWR finds that on-site land management provides superior accountability than off-site management and therefore supports entering into third party leases with private and local public land managers. Resource Agency Order #6 provides the authority needed for DWR to enter into a lease with a third party with an approval condition of the primary land manager. Under the authorization of this order, the DWR has leased several small acreages to private groups or individuals in locations where the DWR is the primary management authority, as well as in locations within the OWA and LOSRA. Table 5.3-1 provides a summary of known third-party lease arrangements with the DWR. These leases are generally located on scattered noncontiguous parcels west of the Oroville Dam and within the OWA.

A wide variety of activities occur on leased lands, including but not limited to: cattle grazing, cemetery use, rifle and clay pigeon shooting ranges, model airplane activities, game bird farming, and aggregate mining (Figure 5.3-1). Either verbal or documented approval was provided to DWR by DPR and DFG for lease arrangements within their management jurisdictions. Lease arrangements are on file with DWR, with the exception of those that currently remain unaccounted for due to the older age of the written agreement. One lease, the Campbell grazing lease, will come to term in 2004 and will have opportunity for renegotiation. The other leases have separate expiration dates (pers. comm., Chin 2003).

Table 5.3-1. DWR Third Party Leases.

Lessee	Type	Location	DWR Parcel Nos.	Acres	Purpose	Term
John Campbell	Private	Adjacent to Diversion Pool & Spillway; Portion within Thermalito Power Canal to DPR, approx 50+ acres in DWR property only.	ORO 64,65,66,67, 68,462,463,464	417	Cattle Grazing	10-01-99 to 9-30-04
Feather River Rec. & Park District	Local public	Just west of HWY 70, North of Nelson Ave.	TC&F 36A	44	Soccer / basketball complex, concessions, restrooms, etc	11-01-97 to 10-31-15
Cemetery*	Private	North of Thermalito Forebay and east of K & L Quail Ranch.	**Oro-4**	**23.7**	Cemetery	No lease
Model Airplane Facility	Private	West of Wilbur Road, north of Thermalito Afterbay.	Info not available	–	Site for flying model airplanes	–
Butte College	Local public	West of Wilbur Road, north of Thermalito Afterbay.	TPP&A 8,9,10	9	Shooting Range	08-15-01 to 08-14-16
Joint Water Districts Board	Local public	Within OWA: East of Feather River, South of Thermalito Afterbay.	ORO B-22	10	Rock Removal	04-26-88 to 04-26-18
Mathews Ready Mix	Private	Within OWA; Adjacent to Feather River, West of HWY 70.	ORO B-83	50	Gravel Extraction	06-22-87 to 06-22-37
Granite Construction	Private	Within OWA; Adjacent to Feather River, East of HWY 70.	ORO 34-C, 34-D,36-A, 83-B	100	Gravel Extraction	06-18-91 to 06-18-41
K & L Quail Ranch*	Private	Outside Project boundary; End of Thompson Flat Road, North of Thermalito Power Canal.	ORO 9D, 9H, 9J, 10C, 11C	77	Game Bird Raising	05-01-97 to 04-30-07

*Note: * Outside Project boundary within the ¼ mile study area.*
Source: Maria Chin, DWR Division of Land and Rights-of-Way November 2003.

Two of these leases, Matthews Ready Mix and Granite Construction, are not technically part of the OWA even though the sites fall within the OWA boundary. These properties were removed from the OWA as part of the Transfer of Control and Possession to DFG signed on August 12, 1968. In two separate amendments to this agreement, DFG reverted back to DWR the control and possession of both Matthews Ready Mix leased lands and Robinson & Sons leased lands, for the life of each lease (50 years) (Amendment 1, page 1, paragraph 3, dated May 8, 1987 and Amendment 2, page 1,

paragraph 2 dated November 19, 1990). Land rights only apply when they are specified in transfer documents, as in these two cases. These amendments legally exclude the two leased lands from the OWA (pers. comm., Buric 2004).

Funding and Oversight of Recreational and Fish and Wildlife Preservation Programs

DWR also funds many of the recreational and fish and wildlife preservation and enhancement facilities associated with the Oroville Project, including the Feather River Fish Hatchery, which are operated by other agencies. In general, DWR does not manage the lands that cater to these uses in the study area, with the exception of the Thermalito Afterbay. DWR supplements DFG management of the OWA by fulfilling the primary recreation management role at Thermalito Afterbay. DWR has constructed and funded recreation facilities in the OWA, including Afterbay access at the Monument Hill, Wilbur Road, and Larkin Road use areas. DWR is also responsible for the maintenance of these facilities and security in these areas. DWR contracts with the Butte County Sheriff's Office to provide continued patrol on the Afterbay and its use areas and access points (pers. comm., Atkinson 2003, Rischbieter 2003).

In addition, DWR is responsible for implementing a variety of recreation-related projects and improvements throughout the LOSRA. FERC Orders regarding DWR's responsibility to carry out improvement projects, fishery studies and fish stocking programs, hatchery operations, and other recreation related tasks have been added as conditions of DWR's license to operate the Oroville Facilities. DWR therefore works closely with other agencies, including DPR and DFG, to both fund and implement the programs and improvements required by FERC. Though in many cases DWR is not directly involved in the implementation of recreation improvements and programs, it is ultimately DWR's responsibility to ensure that all required studies and improvements are properly carried out.

5.3.2 DPR Managed Lands

The official mission statement of DPR, also a department of the California Resources Agency, is to "provide for the health, inspiration and education of the people of California by helping to preserve the State's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation" (DPR Website). DPR manages approximatley 22,000 acres of land within the Project boundary and approximately 1,000 acres outside it but within the study area (32 percent of the total study area). Figure 5.3-2 illustrates the locations of these lands within the study area. As indicated in the figure, most of this area is surface water managed for recreational use within the LOSRA and inside the Project boundary. The LOSRA includes all lands within the Project boundary in the West Branch, Upper North Fork, Lower North Fork, Middle Fork, South Fork, and the Main Basin. Several isolated DPR properties, totaling aproximatley 250 acres, are located in

the Upper North Fork of the Feather River where DPR is the "controlling" agency. These parcels fall outside the Project boundary but within the study area (Figure 5.3-2).

5.3.2.1 DPR Management Direction

Following the completion of the Oroville Facilities, the recreational interest for lands within what is now the LOSRA were deeded by DWR to DPR in 1966 under the Agreement for Transfer to Department of Parks and Recreation of Interest in Certain Real Property at Oroville Division of State Water Project.

The LOSRA General Plan (GP) was developed by DPR in 1973, and is still in use today. An Amendment adopted in 1988 details additional development in the Lime Saddle Area. The GP describes allowable recreational uses and intensities for various areas around the lake, such as Bidwell Canyon, Lime Saddle, Goat Ranch, and others. Recreational use intensities described in the GP are primarily tied to slope and resource protection constraints. The GP also describes the existing and proposed recreational development (as of 1973) within 15 areas of the LOSRA, including Bidwell Canyon, Loafer Creek, Spillway Ramp, Lime Saddle, Thermalito Forebay, and other areas. These developments to date include overnight facilities (camping sites, group camps), day-use facilities (parking, picnic units, and swimming beaches), and boating facilities (launching lanes, car/trailer parking, and marina slips). Management policies contained in the GP emphasize that lands and resources at LOSRA are to be managed to provide recreational opportunities and facilities in a natural or quasi-natural setting. The purpose of the GP is to "…perpetuate, enhance, and make available to the public the recreational opportunities afforded by Lake Oroville, Thermalito Forebay, and adjacent land and water areas, and to protect all environmental amenities so that they make an optimum contribution to public enjoyment of the area."

The Northern Buttes District of DPR has been the most prominent recreation management agency in the study area, managing and operating the LOSRA. DPR designs, constructs, manages, operates, and maintains many of the associated recreational facilities and opportunities associated with the LOSRA. The Lime Saddle Campground, designed and constructed by DWR, and is now operated and maintained by DPR with supplemental funding from DWR.

As allowed under the California Public Resources Code (Section 5019.56), the Northern Buttes District has undertaken improvements to provide for a number of recreational activities, including camping, picnicking, swimming, hiking, bicycling, horseback riding, boating, and water sports. Recreation management in the LOSRA is discussed further below. DPR is the primary agency responsible for recreation management in the LOSRA. These duties include addressing a variety of issues such as safety, facilities maintenance, and overall visitor management for all recreational activities. DPR coordinates these activities, when appropriate, with DWR, California Department of Boating and Waterways (DBW), DFG, CDF, Butte County, California Highway Patrol,

Insert Figure 5.3-2 DPR Map

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volunteer organizations, and other groups and agencies. DPR is the primary agency responsible for managing the LOSRA as specified under the Public Resources Code and the Davis-Dolwig Act (Water Code Sections 11910-11925). Ongoing DPR management duties include the following:

- Park equipment and facilities maintenance;
- Aquatic maintenance;
- Systems maintenance;
- Safety and enforcement, on both land and water;
- Project management;
- Volunteer management;
- Concession management;
- Resource management;
- Park administration;
- Interpretive activities; and
- Strategic planning.

5.3.2.2 Existing DPR Management Conditions

DPR employs a total of 32 employees at the LOSRA. Park management and patrols are conducted by eleven Rangers, two Supervising Rangers, and one Chief Ranger, who provides support to all 13 units in the Northern Buttes District. General maintenance, including maintenance of all recreation-related facilities, is carried out by four Park Maintenance Worker I employees and two Park Maintenance Worker II employees, with the help of five Park Maintenance Assistants. Maintenance activities are overseen by the Park Maintenance Chief and two Park Maintenance Supervisors. Park and maintenance equipment and grounds are maintained separately by the Grounds Maintenance Technician and the Heavy Equipment Mechanic and Helper Mechanic, who also provide support services to the 13 units in the Northern Buttes District. Utilities in the LOSRA are overseen by the Water/Sewer Plant Supervisor. In addition to LOSRA staff, the Northern Buttes District administrative staff, Interpretive Specialist, Resource Ecologist, Engineer and Landscape Architect provide additional aid to all units in the District. DPR also hires additional seasonal support staff in the summer to operate entrance stations and carry out basic facility maintenance tasks (pers. comm., Feazel 2003).

Routine tasks performed by DPR staff include cleaning and maintaining restroom and toilet facilities; servicing refuse bins; maintaining camping and day use areas, including boat ramps, courtesy docks, and 47 miles of trails; monitoring and maintaining buoys and vessels; and maintaining recreation area grounds. DPR is also responsible for carrying out boat safety inspections and providing the reservoir safety patrol. Less frequent tasks include road maintenance for approximately 21 miles of road, maintenance on all park

utilities (including electrical, water, and wastewater facilities), and maintenance of all recreational facilities.

DPR has several lease arrangements with concessionaires, which are primarily for food or operation of a facility. The two major concessionaires subject to DPR oversight include Bidwell Canyon Marina and Lime Saddle Marina. DPR has contracts with minor concessionaires, as well, such as diving concessions, a wake board concession, and several fishing guides.

Special event permits are another type of contractual agreement supervised by DPR. DPR authorizes over approximately 100 special event permits annually for fishing tournaments and picnic sites (pers. comm., Calloway 2004).

DPR also manages the Clay Pit State Vehicular Recreation Area (SVRA) outside of the LOSRA and adjacent to the OWA.

Aside from routine operations and maintenance, DPR's most pressing management issues in the study area include management of culturally sensitive areas, trail management, Americans with Disabilities Act (ADA) requirements, staffing levels, and low water level facilities for marina access. "The Seventh Generation: The Strategic Vision of California State Parks" (DPR 2001) outlines the strategies and management practices that DPR follows in managing parks throughout the State. DPR's management strategies and practices in the LOSRA include:

- Public involvement – meeting with interest groups and the general public;
- Inter-agency involvement- meeting and coordinating with other agencies;
- Hiring qualified staff;
- Contracting professional services;
- Seeking alternative funding sources, including grants and reimbursements;
- Using data collection to identify and resolve relevant issues; and
- Following Total Quality Management Practices.

DPR manages interpretive programs, visitor center activities, special events coordination, and general recreational opportunities using the above practices.

Although DPR manages the majority of LOSRA's recreational aspects, DWR bears the ultimate responsibility under the current FERC license for ensuring funding, development, and management of current and additional recreation facilities and Feather River Project 2100. As previously mentioned, the Davis-Dolwig Act (Water Code Sections 11910-11925) requires DWR to plan for and acquire land for recreation in conjunction with all state water projects. In keeping with its responsibility, DWR works with DPR and DFG to provide for recreational opportunities and funding throughout the study area.

5.3.3 DFG Managed Lands

The DFG is also a department of the California Resources Agency. The mission of the DFG within the state is: "To manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public." DFG manages approximatley 12,000 acres of land, or 17 percent of the total study area. Most of this area (11, 200 acres) is located within the Project boundary. DFG manges fish and wildlife habitat and associated recreational use for both surface water and dry lands within the OWA and the LOSRA and operates the Feather River Fish Hatchery. Figure 5.3-3 illustrates the locations of DFG-managed lands, as well as facilities for which the agency is responsible within the study area.

Most of the land area for which DFG provides day-to-day management is within the OWA. The OWA includes the Thermalito Afterbay and a wide swath of wildlife habitat straddling the Feather River low flow channel section of the Project south and west of the City of Oroville. These lands are primarily located within the Project boundary (Figure 5.3-3). The OWA was formally established by DWR in 1968. Initially, part of this area was known as the Oroville Borrow Area, which was the source of clay and aggregate for the construction of the Lake Oroville Dam. DWR acquired the Oroville Borrow Area in the public interest for fish and wildlife enhancement and recreational use in 1962. By 1968, a total of 5,500 acres were transferred from DWR to DFG for creation of the OWA. The Thermalito Afterbay was added to the OWA almost 20 years later in 1987. Both of these areas were transferred under the provisions of the Davis-Dolwig Act to DFG by the DWR. DFG has been the manager of the OWA since its establishment.

In addition to the OWA and LOSRA, the DFG operates and manages the Feather River Fish Hatchery. The hatchery was opened in 1967 to compensate for the loss in salmon and steelhead spawning habitat that resulted from the installation of Oroville Dam. While operated by DFG, the hatchery receives substantial funding and maintenance from DWR. DFG also studies and manages the warm- and cold-water fisheries in Lake Oroville and assists with DWR's habitat improvement and fish stocking programs.

In general, DFG interacts with other management agencies in the study area to ensure that hunting and fishing regulations on public and private lands are enforced and maintains authority over all activities that have the potential to impact wildlife or wildlife habitat. DFG has permit authority over projects that would impact the flow, bed, channel, or bank of any river, stream, or lake throughout the study area. This authority allows DFG a mechanism to protect or enhance fish and wildlife habitat as they relate to specific project actions (pers. comm., Atkinson 2003).

5.3.3.1 DFG Management Direction

DFG manages the OWA, the wildlife and habitats of the LOSRA, and its other State-wide responsibilities under Title 14 of the California Fish and Game Code, Sections 1525 – 1530 and the California Fish and Game Commission's Hunting and Other Public Uses on State and federal Lands California Regulations (DFG 2002). To ensure compatibility with the goals and uses of the Oroville Facilities within the LOSRA, DFG is also responsible for managing fish and wildlife resources and recreation activities pursuant to the Davis-Dolwig Act (Water Code Section 11917). Within the OWA, DFG strives to carry out management responsibilities as identified in the 1978 Oroville Wildlife Area Management Plan (DFG 1978). DFG, with limited assistance from DWR, strives to achieve the objectives laid out in each of these documents through its lands, facilities, and fish and wildlife management strategies and practices.

The purpose of the 1978 Oroville Wildlife Area Management Plan was to provide for the preservation and enhancement of the OWA and for the reasonable use and enjoyment by the public. The Management Plan describes the plan's purpose, description of the area, history of the site, present (as of 1978) situation and problems, and recommended action programs. DFGs three management objectives for the OWA were prioritized as follows:

1. To maintain and improve the fish and wildlife resources of the area for their intrinsic and ecological values;
2. To maintain and improve the environmental quality and amenity of the area; and
3. To provide for the recreational, scientific, and educational use of the area.

As a State Wildlife Area, fish and wildlife protection and enhancement are the primary management purposes within the OWA; recreation and public use within the OWA are secondary to habitat preservation. The Management Plan also states that destructive uses and activities incompatible with wildlife and fisheries objectives (that were present at the time the Management Plan was written) will be eliminated through enforcement of existing regulations or development of additional regulations if necessary.

The California Regulations on Hunting and Other Public Uses on State and Federal Areas provide management direction for lands associated with hunting activities on State and federally owned lands in California and includes specific management direction for the OWA. The Regulations include hunting license provisions and requirements; application and fee information; a listing of all hunting areas throughout the State, including wildlife areas, recreation areas, and National Forests; and detailed information regarding area locations and boundaries, hunting practices and regulations, permit requirements, and firearms and archery equipment regulations in each hunting area.

Insert Figure 5.3-3 DFG

Insert back of Figure 5.3-3 DFG

The OWA, which is located within the Project boundary, is designated as a "Type C" hunting area by the Regulations. As a Type C hunting area, a permit or pass is not required for most uses. However, a State hunting license is required for taking any bird or mammal. In addition to a hunting license, State and Federal Duck Stamps are required to take migratory waterfowl; an Upland Game Bird Stamp is required to take band-tailed pigeon, chukka, pheasant, turkey, dove, snipe, grouse, ptarmigan and quail; and license tags are required for taking large game. The OWA is open to hunting between September 1 and January 31 and during spring turkey season, when only turkeys may be hunted. Special permits are required during the spring turkey season and are issued by drawing each year. No off-highway vehicles are allowed at any time.

Regulations within the OWA that influence the use of the area include:

- **Boating Regulations** – Boating is allowed only on Thermalito Afterbay. Boats may only be launched from designated ramps and may be restricted to certain zones designated by the department. Boat speeds are restricted to a maximum of 5 miles per hour;
- **Camping Regulations** – Camping is only permitted in designated campsites in the OWA. Camping is limited to 7 consecutive days and up to 14 days total in any calendar year, except by written permission of the Regional Manager;
- **Dog Training Regulations** – Dog training is allowed only in designated areas and only from July 1 through March 15;
- **Campfire Regulations** – Fires are allowed only in portable gas stoves at sites designated for camping; and
- **Horseback Riding Regulations** – Horses are restricted to roads open to vehicles and to areas within 25 feet of exterior boundary fences.

Third-Party Leases within the OWA

The DWR has entered into several third-party leases with private individuals and groups within the OWA (refer to Section 5.3.1.2 and Table 5.3-1). DFG, the primary land manager of the OWA, is not party to the lease arrangements. DWR leases within the OWA include arrangements with Butte College for a shooting range west of Wilbur Road and north of Thermalito Afterbay, a Model Airplane Club for a flying zone west of Wilbur Road and north of Thermalito Afterbay, Granite Construction and Matthews Ready Mix for gravel extraction, and the Joint Water Districts Board for rock removal (pers. comm., Chin 2003). Two of these leases, Matthews Ready Mix and Granite Construction, are not technically part of the OWA even though the sites fall within the OWA boundary. These properties were removed from the OWA as part of the Transfer

of Control and Possession to DFG originally signed on August 12, 1968, as amended. Refer to Section 5.3.1.2 for additional information (pers. comm., Buric 2004).

5.3.3.2 Existing DFG Management Conditions

Recreation in the OWA is managed by DFG, with assistance from DWR at Thermalito Afterbay. OWA is managed "for the preservation and enhancement of the fish and wildlife resources…and for reasonable use and enjoyment by the public" (DFG 1978). Because of its proximity to Oroville, Gridley, and Biggs, the OWA receives heavy recreational use by local residents. Hunting and wildlife viewing in the OWA attracts visitors from farther away, and the fishing access afforded to 9½ miles of the Feather River also attracts numerous persons from throughout the West. Recreation in the OWA primarily consists of river fishing, pond fishing, camping, sightseeing and wildlife viewing, hunting, mountain biking, and picnicking, with lesser numbers of visitors swimming, target shooting, or training dogs. Group use at the OWA is relatively high. The area hosts special events on occasion, including nature study and educational groups, shooting matches, hunter safety classes, and equestrian events.

DFG manages the OWA as a State Wildlife Area, meaning that fish and wildlife protection and enhancement are the primary management purposes and that recreation and public use are secondary. Because fish and wildlife are primary issues, and because much of the recreational opportunities in the OWA center on fish and wildlife resources, recreation management in the OWA includes fish and wildlife management, habitat improvement, and enforcement of the Fish and Game Code and wildlife area restrictions and regulations. However, the continuous hunting allowed seven days a week during hunting season has resulted in diminished game levels during this season (pers. comm., Atkinson 2003).

The lack of management personnel and funding is one of the biggest challenges facing the mission of DFG in the OWA. DFG operating standards identify the need for one habitat manager per 1,000 acres, or 12 personnel (not including wildlife protection/law enforcement or administrative staff). Prior to March 2004, the 12,000-acre OWA was managed by only 3habitat managers with no office staff support. As of March 1, 2004, these habitat managers have been temporarily assigned to other Wildlife Areas until staffing issues can be resolved. During this interim period, the OWA periodically receives visits from one habitat manager for management purposes. This condition has placed OWA management operations in "crisis" mode, where emergency situations are prioritized over operational goals associated with wildlife conservation and recreation in the OWA. The DFG has expressed concerns over the absence of patrol of the OWA due to budget constraints. Remote areas within the OWA that are accessible by road are susceptible to illegal activities, such as dumping, fires, and lawless behavior. DFG staff have attempted to remove trash and illegally dumped materials from the OWA when possible, although this took time away from management objectives. Maintenance needs such as basic road maintenance and posting wayfinding signage

and maps for users are also unmet due to budget constraints (pers. comm., Atkinson, 2003).

Although the Thermalito Afterbay is included in the OWA, the DWR is responsible for recreation management in this area. DWR funded the construction of recreation facilities and Afterbay boat ramps at the Monument Hill, Wilbur Road, and Larkin Road use areas and is responsible for the maintenance of these facilities. DWR contracts with the Butte County Sheriff's Office to provide continued patrol on the Afterbay and its use areas and access points. Although the transfer agreement states that DFG is responsible for managing the Afterbay, the agency has less involvement in this area due to uses and activities already managed by DWR (pers. comm., Atkinson 2003; Rischbieter 2003)

Boating is allowed on the Thermalito Afterbay in the OWA and boats may be launched from designated areas. Currently, the 5 mile–per-hour speed limit set for boats in the Fish and Game Code is not being enforced. Personal watercraft and powerboats that pull water skiers exceed this speed limit on a normal basis. High boat and personal watercraft speeds in the Afterbay could have adverse impacts on wildlife habitat located adjacent to the banks of the Afterbay within the OWA (pers. comm., Atkinson 2003). However, boating speeds are not enforced by the Butte County Sheriff's Office due to conflicting management goals. In this case, the conflicting goals include DWR's objective to provide recreational boating opportunities and DFG's objective to limit activities that may be inconsistent with the OWA's management direction for wildlife enhancement/protection. Lack of enforcement of these speeds may affect the management of fish and wildlife-related resources and may influence the quality and perpetuation of recreation related to those resources.

Several management inconsistencies may occur in specific areas of the OWA between DWR management direction and the wildlife conservation and recreation objectives of DFG. Activities such as active mineral extraction within the arm adjacent to the OWA, boat ramp construction, motor boat use along the Feather River above the Thermalito Afterbay outlet, and increased public activity at early access points (e.g., Larkin Road Thermalito Afterbay Car-top Boat Ramp [BR]) during hunting season could be perceived as incompatible uses with the preservation of fish and wildlife habitat in the OWA. At the same time, habitat enhancement opportunities could be created if uses were phased to avoid conflict or provide improvements. For example, mineral extraction sites could be reclaimed to create new types and locations of fish and wildlife habitat and reincorporated into the OWA.

5.4 LANDS UNDER COUNTY AND CITY JURISDICTION

While the majority of land within the study area is owned and managed by State and federal agencies, approximately 33 percent is in other, primarily private ownership. .

These lands are primarily governed under the jurisdictions of Butte County and the City of Oroville (see Table 5.1-1). No private lands are located within the Project boundary.

The following sections discuss the management direction provided by the County and City policies and development regulations and addresses existing issues that pertain to the study area.

5.4.1 Butte County

Butte County has land management jurisdiction over 21,500 acres of land outside the Project boundary, or roughly one third of the study area. All private development within this area is subject to the policies detailed in the Butte County General Plan (GP) and Zoning Ordinance.

5.4.1.1 Butte County General Plan and County Code

Local governments have been directed by the State of California to prepare and adopt a general plan per Section 65302 (a) of the California Government Code. In compliance with California Law, the Butte County GP was originally adopted in 1971 by Butte County and the Butte County Association of Governments. The majority of the document's elements have been revised since adoption of the initial plan; some as recently as the year 2000 while others were last revisited in 1977. The purpose of the document is to provide a complete statement of the policies and intentions regarding future development of land over a planning horizon of 20 years, which extends to the year 2016. The County is currently updating elements of the General Plan.

The Butte County GP contains twelve elements, including: Land Use, Circulation, Housing, Conservation, Open Space, Seismic Safety, Safety, Noise, Scenic Highways, Recreation, Economy, and Agriculture. California law does not exclude the area of incorporated cities from the coverage of county general plans. Butte County does not have jurisdiction over incorporated cities, such as Oroville, although city policies must be consistent with the County's General Plan. (City policies may be more stringent than the County's, so long as they are consistent with the County's direction.) Butte County and the cities within it take into consideration each others land use policies, regulations and public service capacities when developing their general plans. In addition, counties and cities often enter into local agreements with one another to carry out general public services that cross jurisdictional limits as needed. Therefore, the policies in the Butte County GP Land Use Element, which is the element most relevant to the Project, are county-wide in scope and are not limited to unincorporated areas. The most recent amendment of the Land Use element occurred in January 2000 (Butte County Website 2003) (Joseph Baker, 2004).

Land Use

The County's land use policies guide how the land and its resources will be used. The social, cultural, and economic interests of County stakeholders have directed the pattern and intensity of planned land uses to help achieve its long-range "vision" for the County. The land use element of the Butte County General Plan designates 11 land use categories within the study area.

The Butte County Zoning Ordinance is the regulatory mechanism that implements the County's land use designations. The zoning ordinance is a set of districts with different regulations on permitted uses, residential densities, lot sizes, signs, parking, and the intensity and placement of structures. The written text of the ordinance is accompanied by maps dividing the entire jurisdiction into zoning districts. The immediate effect, detailed regulations, and precise boundaries of the zoning ordinance make it the most effective tool available for controlling physical development according to county policies.

The three primary land use designations in the study area include Public, Grazing and Open Land, and Timber Mountain land use. The following zones are intended to implement these land uses:

- Public-Quasi-Public (P-Q);
- Agriculture, 40 acre minimum (A-40);
- Agriculture, 160 acre minimum (A-160);
- Foothill Recreational (FR-40);
- Foothill Recreational (FR-160);
- Commercial Forestry (C-F);
- Timber Preserve, 160 acre minimum (TPZ-160); and
- "Unclassified" (U).

Unclassified lands are those that are not assigned a specific zoning classification by the County. These lands require minimal land management direction and oversight due to the development constraints of the properties.

Planned land uses, including their primary and secondary uses, and the implementing zoning districts are described In Table 5.4-1. The County's zoning districts, aggregated into categories, are illustrated in Figures 5.4-1A through 5.4-1C.

Table 5.4-1. Butte County designated land use.

Butte County Land Use Designation	Implementing Zone(s)
Public	P-Q and any zone which allows proposed use and public and quasi-public uses.
Primary Uses: Large facilities owned and operated by government agencies, including schools, colleges, airports, dams and reservoirs, disposal sites, recreation facilities, conservation areas, fire stations, and other government buildings and property.	Intensity of Use: No standards on intensity, except where necessary to protect adjacent uses and the public welfare.

Table 5.4-1. Butte County designated land use.

Butte County Land Use Designation	Implementing Zone(s)
Secondary Uses: Hospitals and other large quasi-public uses, housing for students or on-site employees, and utilities.	
Grazing and Open Land Use	**TM-40 thru TM-160, A-40 thru A-160, FR-40 thru FR-160, R-C, C-F, TP-160, PA-C.**
Primary Uses: Livestock grazing, animal husbandry, intense animal uses, and animal matter processing.	Intensity of Use: Minimum parcel size of 40 acres. Gross density could vary from 20 to 40 acres per dwelling unit provided at least 80 percent of the total acreage of a Project is set aside for open space uses. One single-family dwelling per parcel with additional housing for on-site employees is encouraged.
Secondary Uses: Resource extraction and processing, forestry, plant crops, agricultural support services, outdoor recreation facilities, airports, dwellings, utilities, environmental preservation activities, public and quasi-public uses, and home occupations.	
Timber Mountain Land Use	**TM-40 thru TM-160, A-40 thru A-160, FR-40 thru FR-160, R-C, C-F,TP-160, and PA-C.**
Primary Uses: Forest management and the harvesting and processing of forest products.	Intensity of Use: In general, the minimum parcel size is 40 acres with some exceptions. One single family (SF) dwelling unit (DU) per parcel with additional housing for on-site employees.
Secondary Uses: Animal husbandry, resource extraction and processing environmental preservation activities, outdoor recreation facilities, dwellings, utilities, public and quasi-public uses, home occupations, and airports.	
Orchard and Field Crops Land Use	**A-20 thru A-160, RC and PQ**
Primary Uses: Cultivation, harvest, storage, processing, sale and distribution of all plant crops, especially annual food crops.	Intensity of Use: Minimum parcel size of 5 acres. One SF DU per parcel with additional housing for on-site employees allowed.
Secondary Uses: Animal husbandry and intense animal uses, resource extraction and processing, hunting and water-related recreation facilities, dwellings, airports, utilities, environmental preservation activities, public and quasi-public uses, and home occupations.	
Agricultural Residential Land Use	**A-20, A-40, TM-20, TM-40, FR-20, FR-40, & C-F.**
Primary Uses: Agricultural uses and SF dwellings at rural densities.	Intensity of Use: The minimum parcel size is 1 to 40 acres. One SF DU per parcel. Home occupations, farm animals, other uses, and setbacks regulated to maintain rural character.
Secondary Uses: Animal husbandry, forestry, intense animal uses, home occupations, mining, outdoor recreation facilities, environmental preservation activities, airports, utilities, public and quasi-public uses, group quarters, care homes, and transient lodging.	
Foothill Recreational Land Use	**FR-5 thru FR-160, A-5 thru A-160, AR-5, SR-5, TM-5 thru TM-160, C-F, R-C, P-Q, and PA-C (5 ac. min).**
Primary Uses: SF DUs at rural densities.	Intensity of Use: Minimum parcel size of 1 to 40 acres, with the specific density being subject to zoning factors and development criteria.
Secondary Uses: Agriculture uses, animal husbandry, home occupations, resource extraction and processing, forestry, outdoor recreational facilities, environmental preservation activities, airports, utilities, public and quasi-public uses, dwellings, group quarters, care homes, and	

Table 5.4-1. Butte County designated land use.

Butte County Land Use Designation	Implementing Zone(s)
other secondary uses.	
Low Density Residential Land Use	**R-1, R-1 A & C, RT-1, RT-1A, A-SR, M-R, S-R, SR-5, SR-1, TM-1, R-MH, PA-C.**
Primary Uses: Detached SF DUs at urban densities.	Intensity of Use: Zoning allows net parcel sizes of 1 acre to 6,500 square feet. One SF DU per parcel with other residential uses limited to a maximum density of six DUs per gross acre. Home occupations, farm animals, other uses and setbacks regulated to maintain SF residential character.
Secondary Uses: Agricultural uses, animal husbandry, home occupations, outdoor recreation facilities, utilities, public and quasi-public uses, group quarters and care homes.	
Medium Density Residential Land Use	**R-1, R-1 A & C, RT-1, A-SR, S-R, SR-5, R-MH, A-R, R-2, R-3, R-4, AR-MH, MHP, PA-C.**
Primary Uses: A mixture of urban residential uses, including detached SF homes, condominiums, multiple-dwelling structures, mobile home parks, group quarters and care homes.	Intensity of Use: Zoning allows net parcel size of 6,500 square feet. A maximum density of 13 DUs per gross acre with group quarters and care homes limited to similar densities is permitted.
Secondary Uses: Home occupations, professional and business offices, outdoor recreation facilities, utilities, public/quasi-public uses.	
High Density Residential Land Use	**A-R, AR-MH, R-2, R-3, R-4, MH-P, PA-C.**
Primary Uses: Higher-density urban residential uses, including condominiums, multiple-dwelling structures, mobile home parks, group quarters and care homes.	Intensity of Use: Zoning allows parcel sizes of 6,500 square feet. A maximum density of 20 DUs per gross acres with group quarters and care homes limited to similar densities is permitted.
Secondary Uses: Home occupations, professional and business offices, outdoor recreation facilities, utilities, public and quasi-public uses.	
Commercial Land Use	**C-1, C-2, C-C, H-C, N-C, PA-C, R-4, S-H.**
Primary Uses: Structures and activities providing a full range of merchandise and services to the general public.	Intensity of Use: Minimum parcel sizes, dimensions and setbacks to facilitate commercial development. Residential and industrial uses are limited to minimize conflicts with commercial uses.
Secondary Uses: Wholesale storage and distribution, processing and manufacturing, transient lodging, dwelling and group quarters, home occupations, utilities, public and quasi-public uses.	
Industrial Land Use	**M-1, M-2.**
Primary Uses: Processing, manufacturing, packaging, storage and distribution of goods and commodities.	Intensity of Use: Minimum parcel sizes, dimensions and setbacks to facilitate intense industrial development. Residential and light commercial uses limited to minimize conflicts with industrial uses.
Secondary Uses: Light commercial uses, dwellings, utilities, public and quasi-public uses.	

Note: Refer to Figure 5.4-1A through 5.4-1C for zone references.
Source: Butte County General Plan Land Use Element 2000.

Figure 5.4-1A through 5.4-1C categorizes the zoning districts within the study area into the following categories: agricultural, agricultural residential, residential, commercial forest, foothill recreation, commercial, industrial, resource conservation, scenic, and public/quasi public use zoning.
The majority of private lands under Butte County jurisdiction outside of and adjacent to the Project boundary have been designated on the County's zoning map as "unclassified," which consist primarily of constrained areas that require minimal oversight. In the northern study area, unclassified lands are located along the east and west banks of Lake Oroville, as well as along the southern banks of the West Branch and Upper North Fork of the Feather River. Foothill Recreational, at a 40-acre minimum lot size, and Timber Preserve are the other dominant zones along the northern shore of the West Branch and Upper North Fork Feather River (Figures 5.4-1B and 5.4-1C).

Almost half of the Butte County jurisdiction in the Middle and South Forks are in Public, Timber Preserve, Commercial Forestry, and Resource Conservation zones. Unclassified County lands cover the other half of land along these river forks. In some areas, County zoning overlaps with USFS Management Prescriptions. However, Butte County has no management authority for these federal lands.

As can be seen in Figures 5.4-1B and 5.4-1C, zoning classifications in the southern study area from Bidwell Canyon east to the Thermalito Afterbay and OWA are diverse in the types of development and permitted uses. County lands adjacent to the City of Oroville are zoned for more intense commercial and residential development.

The intensity of permitted uses generally decreases the farther an area is from the City, with a few exceptions. County lands adjacent to the OWA are primarily zoned for agriculture and low-density residential development. However, several pockets of industrial and general commercial development are permitted adjacent to the OWA.

Scenic Highways Element

The Scenic Highways Element of the General Plan fulfills Section 261 of the Streets and Highways Code to develop, establish, and protect scenic highways. Scenic highways are defined as a main public road through an area of picturesque natural landscapes. A scenic highway includes not only the pavement or traveled roadway, but also the entire publicly owned right-of-way. Customary accessory uses usually found in the right-of-way include bridges, drainage facilities, public utilities, walkways and trails, protective planting and landscaping, rest areas, and vista points. The primary objective of this element is the protection and enhancement of scenic areas adjacent to and visible from selected highways. (Refer to the Relicensing Study L-3 – *Comprehensive Plan Evaluation* for additional information on Butte County policy direction associated with scenic highways.)

Insert Figures 5.4-1A Butte County Zoning

Insert back of Figures 5.4-1A Butte County Zoning

Insert Figures 5.4-1B Butte County Zoning

Insert back of Figures 5.4-1B Butte County Zoning

Insert Figures 5.4-1C Butte County Zoning

- Insert back of Figures 5.4-1C Butte County Zoning

Scenic highway nominations are evaluated using the following qualifications:

The proposed scenic highway is principally within an unspoiled native habitat and showcases the unique aspects of the landscape. However, the scenic corridor can also showcase agriculture or manmade water features.

- Existing visual intrusions do not significantly impact the scenic corridor.
- Strong local support for the proposed scenic highway designation is demonstrated.
- The length of the proposed scenic highway is not short or segmented.

Being “eligible” for State scenic highway designation indicates that the route is shown on the Master Plan of State Scenic Highways and could someday become a State Scenic Highway, but does not receive protection or enhancement benefits.

No officially designated State or County scenic highways currently exist in the study area. The only eligible State scenic roadway in the Project area is a portion of Highway 70 north of the Main Basin of Lake Oroville. As of yet, this segment is not protected by a State-approved, county-developed plan.

Butte County has also determined that four highway segments are eligible for scenic highway designation within the study area. These segments in the County have been zoned as “Scenic Highways” (S-H) and meet the State's minimum requirements for scenic highway corridor protection (refer to Relicensing Study L-4 – *Aesthetics/Visual Resources Report* for additional information).

- Pentz Road (within the study area west of the West Branch within study area out of Project boundary);
- Highway 162 (along the east side of the main basin from the Canyon Creek area to south of the Bidwell Bar Bridge);
- Highway 70 (on the south side of the West Branch of Lake Oroville near Vinton Gulch); and
- Lumkin Road (at the east end of the South Fork).

These roadways are considered eligible for designation and could potentially become designated State or County scenic roadways. These segments may be sensitive to future Project activities.

Project-Related Policies

The Butte County GP also contains a number of policies that could pertain to the operation and management of Lake Oroville. The County’s policies are primarily related to enhancement of recreational and biological resources at Lake Oroville, as well as the

reduction of potential flood and seismic hazards. Butte County has indicated its strong interest in promoting more recreational development around the reservoir, and there

appears to be support for land use and zoning designations around the reservoir that would make this development possible. The County policies relevant to Lake Oroville are described below in Table 5.4-2, organized by element of the GP.

5.4.1.2 Existing County Management Conditions

Assigning zoning districts to physical locations is intended to encourage land use and development compatibility. In general, most of the private lands in the study area would permit development that is compatible to the adjacent public uses in the Project boundary. However, future development compatibility may be an issue between uses permitted under County zoning and those allowed by the Project in specific areas—especially those that contain existing residential development.

In general, residential areas are typically sensitive to intense adjacent uses. A significant portion of lands within the study area are zoned for uses that allow rural and low-density residential development. One of the most notable residential areas in the study area is Kelly Ridge, which consists of a large subdivision of homes immediately east and outside the boundary of the City of Oroville on a ridgeline overlooking the lake. This area, zoned by the County specifically for residential development, contains significant lake and territorial views. Development pressures are increasing in the Kelly Ridge area (pers. comm., Bishop 2003).

Other areas in the study area that contain scattered, low-density residential development include the Foreman and Canyon Creek areas along the Middle Fork, the Enterprise area along the South Fork, the area between the OWA and the Thermalito Forebay, as well as north of the river. The City of Oroville anticipates residential development in the latter areas, which are in close proximity to the City of Oroville, to continue to grow (pers. comm., Bishop 2003).

In addition to residential uses, pockets of private lands zoned for general commercial and industrial development are currently located adjacent to OWA lands, which are intended for wildlife conservation (Figure 5.4-1A through 5.4-1C). In these areas, the OWA is the sensitive land use. There is an inherent conflict between future commercial and industrial developments, which generate traffic, noise, human activity, and lights, and the need to protect sensitive habitats from intrusion. Buildout of these uses adjacent to the OWA would conflict with the its mission.

Table 5.4-2. Butte County General Plan Policies Related to Lake Oroville.

Element	Policy Statement
Land Use	Biological Habitat: Lake Oroville and Butte County's larger streams are highly valuable habitats for trout, salmon, bass, and other game fish. Several rare and/or endangered plants and animal species are found within the county. Policy 6.5.a. Regulate development in identified winter deer ranges to facilitate the survival of deer herds. Policy 6.5.b. Prevent development and site clearance other than river bank protection of marshes and significant riparian habitats. Policy 6.5.c. Limit development which would increase sediment loads in prime fishing waters. Policy 6.5.d. Regulate development to facilitate survival of identified rare or endangered plants and animals. Geologic Hazards: The risk of landslides is greatest in areas with steep slopes, weak rock, and high rainfall; some areas around Lake Oroville and its branches have very high risk. Erosion potential varies by the same factors but is greatest in granite areas. Findings and policies on these subjects and other geologic hazards are presented in the Safety Element adopted in 1977. Policy 7.4.a. Correlate allowable density of development to potential for landslides, erosion and other types of land instability.
Open Space	Open Space for Outdoor Recreation: The DPR manages the extensive recreation facilities around Lake Oroville and the Thermalito Bays. Policy L. Butte County should encourage DPR to complete their development of recreational facilities in the Lake Oroville State Recreation Area.
Scenic Highways	Eligible State Scenic Highways: Highway 70 north of Highway 149 is eligible as a State Scenic Highway, although not officially designated. Policy 1. Protect valuable scenic areas for enjoyment by residents and visitors. Policy 2. Delineate scenic corridors with careful consideration of all factors. Policy 3. Consider scenic values in the design and improvement of rights-of-way. Policy 4. Control access to scenic highways to control safety. Policy 7. Promote the County's scenic highways program. Policy 5. Locate and design utility structures to minimize visual impact, where economically feasible. Policy 6. Encourage compatible land use patterns in scenic corridors. Policy 8. Consider economic impacts on property affected by a scenic highway designation.
Recreation	Policy 5 Lake Oroville and Facilities: Proposed development (parking, camp, picnic, boat ramp, comfort station, trailer, food, gasoline, oil, water, observation points and other facilities to serve the recreation minded public) at the following facilities: Lime Saddle, Foreman Creek, Bloomer, Craig, Kelly Ridge, Forebay, Loafer Creek, Goat Ranch, Afterbay, Potter Ravine, Fish Hatchery, etc. Development Agencies: County, Recreation District and State Department Parks and Recreation.

Source: Butte County (2000)

Another management issue that Butte County faces is associated with public safety issues on remote County lands and on the Thermalito Afterbay. The Butte County Sheriff's Department is responsible for patrolling County lands and has also been contracted by DWR to patrol the Thermalito Afterbay. DFG has cited safety issues at the Thermalito Afterbay outlet Fishing Area within the Butte County Sheriff's Office patrol area. The Outlet fishing area is a popular fishing spot with limited camping facilities where reported outbreaks between anglers have occurred. Additionally, the DFG cites the Afterbay outlet into the Feather River as a potential drowning hazard, particularly during higher flows.

5.4.2 City of Oroville

The City of Oroville encompasses a small portion of land within the study area. Parts of the City are located south of Lake Oroville and west of Saddle Dam and includes the shoreline of Lake Oroville between Saddle Dam and the northeastern edge of the Oroville Dam Spillway, Thermalito Diversion Pool, Thermalito Forebay, Thermalito Afterbay, the low flow channel of the Feather River, and the OWA (Figure 5.4-2). The City owns and manages approximately 146 acres within the study area. In total, roughly 1,150 acres of public and private lands (or 2 percent of the total study area) are located within City limits. Figure 5.4-2 illustrates the City of Oroville zoning within the City as it relates to the study area.

All development and activity within the City of Oroville is subject to the policies outlined in the City's GP and Zoning Ordinance. The objectives detailed in the GP pertaining to land use serve as a framework within which the City makes decisions relating to activities and developments within the study area that fall under its authority. The policies detailed in the Plan represent the City's adopted commitments to actions that are intended to implement the community's broader objectives.

5.4.2.1 City of Oroville Management Direction

The City of Oroville GP is a statement of Oroville's vision of its long-term future, focusing on the physical components that comprise the City. The General Plan consists of eight sections, including: 1) land use; 2) design; 3) circulation; 4) open space, natural resources, and conservation; 5) public facilities and services; 6) safety; 7) noise; and 8) housing goals, objectives, policies, and designations. The objectives and goals outlined in the Oroville GP are intended to be the framework within which the City will make future decisions related to the community.

The 84-square-mile planning area covered by the GP is comprised of seven planning sectors that include the Oroville Sphere of Influence (as defined by the Butte County Local Agency Formation Commission) and areas immediately to the west, south, and east. The Oroville GP directly addresses the issues of housing, conservation,

Insert Figure 5.4-2. City of Oroville Zoning in the Oroville Relicensing study area
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recreation, industry, and circulation, as well as a number of others. Among the themes of the Oroville GP that are relevant to the study area are:

- **Growth** – The Plan encourages new industries and a higher population growth rate in order to improve the City's economy.

- **Environmental Awareness and Conservation** – The Oroville GP calls for a relatively high level of ongoing management and planning for the City's natural and cultural resources, and encourages the conservation of oak woodlands, wetlands, and riparian corridors, in particular, in order to enhance the quality of life in the area relative to nearby metropolitan areas.

The Land Use Element of the Oroville GP designates areas near the Project facilities as "Medium Density Residential" and "Parks." These land use designations are described below.

- **Medium Density Residential** – Medium density residential land uses in the Oroville Planning Area consist of SF residential development with approximately 2 to 6 units per gross acre on land under 30 percent slope. This land use is primarily located in the Kelley Ridge Planning Sector within Oroville's Sphere of Influence, which is outside of the City's jurisdiction.

- **Parks** – This land use category includes public parks, golf courses, or other appropriate uses. A recreational vehicle park or campground may be permitted as a conditional use within areas designated as Parks. Within the city, this land use includes the Table Mountain Golf Course, located adjacent to the OWA in the Thermalito Planning Area. Within Oroville's unincorporated planning area, park lands are primarily located near the Oroville Dam, and contain such recreational areas as the Bidwell Canyon Campground, the Lake Oroville Visitor Center, and the Dan Beebe trail, which are managed by the DPR.

Oroville GP policies that relate to the operation and management of Lake Oroville generally include enhancement of recreational and biological resources at Lake Oroville, as well as reducing potential flood and seismic hazards. Policies that specifically mention the Project are listed in Table 5.4-3, organized by element of the Oroville GP.

Table 5.4-3. City of Oroville General Plan Policies that Address the Project.

Element	Policy Statement	
City Design	Policy 4x.	Request the state to landscape and develop the Thermalito Afterbay as a destination water recreation park which defines the western boundary of the community in accordance with the State's original master plan of recreation development associated with the FERC permit.
	Policy 4y.	Encourage the efforts of the Feather River Parks and Recreation Department in the North Forebay, Nelson Ballpark expansion, and development of River Bend Park.
Open Space, Natural Resources and Conservation	Policy 6.11s.	Coordinate with the DFG to ensure the ongoing operation of the Feather River Fish Hatchery.
	Policy 6.11w.	Work with the DFG to ensure the preservation and enhancement of species or resident and anadromous fish along the Feather River, in Lake Oroville, and throughout the Planning Area.
Safety	Policy 8.10e.	Monitor studies related to induced seismicity; if further studies establish a conclusive relationship between reservoir drawdown, refilling, and seismic activity, encourage the DWR to manage the Oroville Dam water regime to reduce risk (evidence thus far suggests a relationship between reservoir drawdown, refill, and subsequent seismic activity. This was seen in the 1975 Cleveland Hills earthquake, thought to have occurred after unprecedented drawdown and refilling of Lake Oroville).
	Policy 8.20m.	Identify critical facilities in flood hazard areas and within the Oroville Dam inundation area, and seek ways to improve their level of protection, if possible (critical facilities provide fire and emergency services, water, electricity, gas supply, sewage disposal, communications, and transportation).
	Policy 8.20o.	In the event of dam failure on the Oroville Dam, implement emergency measures consistent with the city's Multi-hazard Functional Disaster Plan (dam failure, while considered unlikely, is among the hazards mentioned in the City's Multi-hazard Functional Disaster Plan).

Source: City of Oroville (1995).

5.4.2.2 Existing City Management Conditions

The City of Oroville's commercial center is located within the study area along the low flow channel of the Feather River adjacent to the Project boundary. Currently, this area is comprised of low intensity commercial areas and park lands immediately adjacent to the river. The City intends to encourage more intense commercial development in the downtown area, south of the river and the Project boundary, to take advantage of potential redevelopment opportunities and the creation of a scenic river walk. The City has also recently proposed a number of new parks adjacent to the Project boundary within the study area (pers. comm., Bishop 2003).

Similar to residential areas within Butte County, the City of Oroville contains lands zoned for residential development within the study area. Although the City expects future residential development growth throughout, most of these areas currently provide for limited residential development. These residential areas are typically sensitive to intense adjacent uses and could be affected by future PM&Es.

Another challenge to the City involves underutilized industrial and commercial lands. The City currently provides an overabundance of industrial uses that has contributed to the degradation of the natural environment from neglect. Adjustments to existing land uses may improve these conditions (pers. comm., Bishop 2003).

5.5 GENERAL LAND MANAGEMENT PATTERNS IN THE STUDY AREA

As illustrated in Figure 5.5-1, land management direction for most lands within the Project boundary emphasize recreation, wildlife conservation, and public facilities. Lands adjacent to the Project boundary within the study area have different management directions and encourage land uses such as agricultural/rural residential development, timber preserve, conservation, recreation, and scenic lands—with the exception of areas along the Diversion Pool and Thermalito Forebay near the City of Oroville.

The following discussion focuses on the spatial distributions/pattern of land management in the study area. Discussing the spatial distribution pattern of land management offers insight and understanding of the dynamics between regional land managers and their respective approaches to land management and how they relate to the relicensing process. As such, a general discussion of land management patterns by sub-areas (i.e., Lake Oroville, Diversion Pool and Thermalito Forebay, Thermalito Afterbay, and the low flow channel) is provided below.

5.5.1 Lake Oroville

Lands underlying and adjacent to the main body of Lake Oroville, as well as surface waters of the LOSRA, are managed almost exclusively for recreation use. Small areas outside of the Project boundary but within the study area in the Upper North, Middle, and South Forks are unproductive forest lands (too steep terrain and difficult access) that receive minimal management by the USFS. Lands managed by BLM in these areas have been identified in the BLM's RRMP for transfer to other entities to improve management efficiency.

The Middle Fork and South Fork Feather River areas have similar management characteristics, containing a mixture of lands managed by DWR, DPR, BLM, USFS, and private interests. Most of the lands along these two branches are currently managed for recreation and resource conservation, with limited areas for timber preserve. Butte County also has jurisdiction along these branches for private lands, although some are not provided with a zoning classification and continue to receive little to no management direction.

Lands located along the east, west, and south banks of the main body of Lake Oroville outside of the Project boundary but within the study area are owned predominantly by private interests with limited public land holdings. Most of these lands are constrained

due to difficult terrain and access, although the Butte County GP does allow rural and low-density residential development for much of these areas. Some of these lands do contain limited areas of residential development. The Kelly Ridge subdivision, which is zoned specifically for residential development, is the most notable residential area within the study area due to its density and location east of the City of Oroville. Kelly Ridge contains significant views of the lake and territory; pressure to develop in this area is increasing. Other areas of scattered residential development located near Lake Oroville include the Foreman and Canyon Creek areas along the Middle Fork and the Enterprise area along the South Fork.

5.5.2 Diversion Pool and Thermalito Forebay

Lands in and near the Diversion Pool and Thermalito Forebay contain a variety of management directions, including public facility management, commercial, recreation, agriculture, residential, and conservation. Public management in this segment tends to be at the State and local level, with only several small BLM surplus properties located east of Oroville Dam.

This sub-area also contains the majority of the City-managed property within the study area. Downtown Oroville is located along the southern shore of the Feather River and is zoned for public and intense commercial and residential uses. The City is also in the planning stages of improving portions of this area by establishing a scenic river walk and more intense commercial development. Lands under City and County jurisdiction to the east and west of the City of Oroville are zoned for, or permit, low-density residential development. Currently, residential development is sprawling west of the City and north of the river. It is anticipated that housing developments in these areas will continue to grow and may be sensitive to Project PM&Es.

5.5.3 Thermalito Afterbay

Management in the Thermalito Afterbay area is somewhat complex. DFG is the primary land manager in this sub-area, which includes lands underlying the Afterbay as part of the OWA. However, as mentioned in Section 5.3.3.2, DWR is responsible for recreation management at the Thermalito Afterbay. DFG management direction for this area is primarily wildlife conservation and recreation. At times, the recreation uses built by DWR in the Afterbay deters wildlife conservation efforts of DFG, although both agencies are following the missions identified by each public agency. In addition, DWR has several third party leases (see Table 5.3-1) that may not be consistent with DFG's management direction. However, DWR supports the active management of lands through third-party leases which can improve land management accountability within the study area.

The area outside the Project boundary is characterized primarily by private land owners, except for small clusters of City-owned and -managed properties and DFG-managed

Insert Figure 5.5-1. Land Management Direction in the Oroville Relicensing study area 11x17

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11x17

properties located north and south of the Project boundary, respectively. This sub-area also contains existing scattered residential development east and north of the Afterbay. Residential development is a permitted use in this area and future residential growth is anticipated.

5.5.4 Low Flow Channel and the OWA

The low flow channel passes through parts of the OWA. Part of the low flow channel is within the Project boundary and part is outside. Lands within the OWA are primarily managed by DFG. DFG management direction for the OWA, which applies primarily to lands within the Project boundary, is wildlife conservation and recreation.

Lands in this sub-area that are located outside of the Project boundary are managed by a mix of public and private interests, including DFG, Butte County, and the City of Oroville. Private leases, DWR management direction, and DFG management direction for some locations within this sub-area may be inconsistent at times. However, these inconsistencies could be redirected into management opportunities. For example, mineral extraction operations located within and adjacent to the OWA can create habitat if properly reclaimed. Pockets of private lands zoned for general commercial and industrial development located adjacent to OWA lands may conflict with OWA management direction for wildlife conservation and recreation (Figure 5.4-1A through 5.4-1C). There may be compatibility issues between future commercial and industrial development, which generates traffic, noise, human activities, and lights, and the need to protect sensitive habitats from intrusion. In general, full development build-out of these uses adjacent to the OWA could hinder conservation efforts.

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6.0 REFERENCES

6.1 LITERATURE:

Bidwell Bar Association and California Department of Parks and Recreation. 2000. Lake Oroville State Recreation Area Trail Map.

BLM (U.S. Bureau of Land Management). 1993. Proposed Redding Resource Management Plan and Final Environmental Impact Statement.

DFG (California Department of Fish and Game). 1978. Oroville Wildlife Area Management Plan.

DFG. 2002. Oroville Wildlife Area Regulations.

DPR (California Department of Parks and Recreation). 1973. Resource Management Plan and General Development Plan Lake Oroville State Recreation Area.

DPR. 2001. The Seventh Generation The Strategic Vision of California State Parks.

DPR. 2002. Hunting Regulations Lake Oroville State Recreation Area.

DWR (California Department of Water Resources). 1966. Bulletin No. 117-6 Oroville Reservoir Thermalito Forebay Thermalito Afterbay Water Resources Recreation Report.

DWR. 1993. Proposed Amended Recreation Plan for Lake Oroville State Recreation Area.

DWR. 1995. Lake Oroville Fisheries Habitat Improvement Plan.

DWR. 1999. Lake Oroville Alternative Recreational Governance Project Final Draft.

DWR. 2000. Comparative Inventory of Recreation Facilities at California's Largest Reservoirs

DWR. 2001. Lake Oroville State Recreation Area Summary of Attendance Data January 1999 – December 2000.

DWR. 2002. Final NEPA Scoping Document 1 and CEQA Notice of Preparation: Oroville Facilities Relicensing FERC Project No. 2100.

FERC (Federal Energy Regulatory Commission). 1994. Order on Revised Recreation Plan. September 22, 1994.

Guthrie, Roger, Donald A. Penland, and Edward Seagle. 1997. 1996 Lake Oroville State Recreation Area Recreational Use Study.

State Water Contractors. 1998. Memorandum regarding payment of costs associated with operation and maintenance of State Water Project related recreational facilities and for recreational facilities required by the Federal Energy Regulatory Commission as part of the Department of Water Resources' FERC licenses.

USFS (U.S. Department of Agriculture, Forest Service). 1988. Plumas National Forest Land and Resource Management Plan.

USFWS (U.S. Fish and Wildlife Service and U.S. Department of Commerce). 1998. 1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation: California.

USFWS. 1999. 1980-1995 Participation in Fishing, Hunting, and Wildlife Watching: National and Regional Demographic Trends (Report 96-5).

6.2 PERSONAL COMMUNICATIONS

Atkinson, A., Wildlife Habitat Supervisor II, Sacramento Valley & Central Sierra Region. DFG, Oroville, CA; personal communication with I. Ferguson, Recreation Planner, EDAW, San Francisco, California; February and June, 2003.

August. L., Facilities Manager, DWR, Oroville, California; telephone communication with N. Bird, Planner, EDAW, Seattle, Washington; September 25, 2003.

Babb, D., Oroville Field Division, Civil Maintenance, DWR, Oroville, CA; email communication between J. Martin, Project Manager, DWR, to N. Bird, Planner, EDAW, Seattle, Washington; February 2, 2004.

Baker, J. Planning Manager, Butte County Department of Development Services; email communications with N. Bird, Planner, EDAW, Seattle, Washington; April 6, 2004.

Berg, F., BLM, Redding, Washington; email communication with N. Bird, Planner, EDAW, Seattle, Washington; August 19, 2003.

Bishop, R., Assistant Planner, City of Oroville Planning Department, Oroville, California; personal communication with N. Bird, Planner, EDAW, Seattle, Washington; February 25, 2003.

Buric, M., Lands Division, DWR, California Resource Agency, Sacramento, CA; email communications with N. Bird, Planner, EDAW, Seattle, Washington; April 8, 2004.

Calloway, R., DPR, Oroville, CA; telephone communication with N. Bird, Planner, EDAW, Seattle, Washington; April 12, 2004.

Chin, M., Lands Division, DWR, Sacramento, CA; telephone communication with N. Bird, Planner, EDAW, Seattle, Washington; August 12, 2003.

Elliot, W., DPR, Oroville, CA; telephone communication with I. Ferguson, Recreation Planner, EDAW, San Francisco, CA; February 2003.

Emery, I., Real Estate Division. BLM, Redding, Washington; telephone communication with N. Bird, Planner, EDAW, Seattle, Washington; August 12, 2003.

Feazel, S., Chief Ranger, Northern Buttes District, DPR, Oroville, California; personal communication with I. Ferguson, EDAW; April 2003.

Humpherys, T., USFS; personal communication with I. Ferguson, EDAW; February 20, 2003.

Matzat, H., BLM, Redding, Washington; telephone communication with N. Bird, Planner, EDAW, Seattle, Washington; August 12, 2003.

Rischbieter, D., DWR, Sacramento, CA; telephone communication with I. Ferguson, Recreation Planner, EDAW, San Francisco, CA; June 2003.

Rischbieter, D., Resource Area Manager. DWR; personal communication with I. Ferguson of EDAW, December 2002.

Ritter, E., Archeologist. BLM, Redding, Washington; telephone communication with I. Ferguson, Recreation Planner, EDAW, San Francisco, CA; March 2003.

Taylor, M., Plumas National Forest, USFS, Oroville, CA; telephone communication with N. Bird, Planner, EDAW, Seattle, Washington; August 14, 2003.

Williams, K., Natural Resources Specialist, BLM, Redding Field Office; personal communication with I. Ferguson, EDAW;, February 13, 2003.

6.3 INTERNET RESOURCES

USFS. Mission statement. Site accessed June 2003. URL = http://www.fs.fed.us/aboutus/mission.shtml.

DWR. DWR Responsibilities. Site accessed June 2003. URL = http://wwwdwr.water.ca.gov/

DPR. DPR Responsibilities. Site accessed June 2003. URL = http://ceres.ca.gov/wetlands/agencies/dept_parks_recreation.html

Butte County. 2000. Butte County General Plan. Site accessed April 2004. URL = http://www.buttecounty.net/dds/Planning/land.htm

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Appendix A

Public Entity Regulatory Guidance

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APPENDIX A

Table A-1. French Creek Management Area and Applicable Management Prescriptions' Standards and Guidelines.

Management Area Direction	Standards and Guidelines
Recreation	
Efficiently manage recreation in the Lake Oroville State Recreation Area.	Continue cooperation allowing the DPR to manage the reservoir area including Plumas National Forest lands.
Provide developed recreation facilities/programs to meet demand while reducing unit costs.	Maintain Rogers Cow Camp Campground, but operate as a self-service facility with no developed water supply. Close when major expenditure is required.
Visual Resources	
Maintain pleasing visual corridors.	Minimize the visual impact of transmission lines and hydroelectric facilities.
Wildlife	
Maintain species viability.	Provide suitable bald eagle foraging habitat along the North Fork upstream from Lake Oroville.
Water	
Protect and where necessary, improve water quality.	Maintain and construct additional erosion control works when needed to control excessive erosion and sedimentation from the French Creek basin.
Facilities	
Upgrade forest arterials and collectors.	Reconstruct the Quincy-Oroville Highway as part of the Forest Highway System. Reconstruct the Stanwood Saddle Road in cooperation with Butte County.
Management Prescriptions	**Implementation**
Minimal Management – Rx7	
Purpose	*Type of Lands*
Maintain existing physical characteristics of certain lands through low intensity management.	Areas managed under this prescription include: 1) non-forested lands; 2) non-productive forest lands; 3) productive forest lands that are not economical to manage; 4) lands with substantial instability problems; 5) lands schedule for exchange; and 6) land with significant scenic, geologic, ecologic, and cultural resource values.
Direction	*Standards and Guidelines*
Visual Resources – Maintain high Visual Quality Objectives (VQO).	Meet mapped, adopted VQOs, which may vary from site to site.
Cultural Resources – Protect significant cultural properties.	Develop specific mitigation plans for exchange lands.
Range – Maintain existing range use.	Maintain active allotments. Do not fill vacant allotments or create new allotments.
Timber – To protect watershed condition, special interest areas, and lands scheduled for exchange, use appropriate special cutting methods for unscheduled yields without forest regulation.	Allow harvest of timber, fuelwood, and other products on if: • Long term growth can be maintained; • Erosion and instability problems will not be induced or aggravated; • Unique scenic, geologic, ecologic, and significant cultural resource values are protected; and • No encumbrances are placed on lands scheduled for exchange.
Special Areas – Protect unique scenic, geologic, and ecologic values.	Mange those unique areas identified in the Management Area Direction to protect or enhance their values.

Source: USFS (1988)

Table A-2. Galen Management Area and Applicable Management Prescriptions' Standards and Guidelines.

Management Area Direction	Standards and Guidelines
Recreation	
Efficiently manage recreation in the Lake Oroville State Recreation.	Continue cooperation allowing DPR to manage the reservoir area including Plumas National Forest lands.
Provide for semi-primitive recreation.	Maintain the character of the Big Bald Rock semi-primitive area. Restrict ORV use.
Facilities	
Provide roads necessary to meet developed recreation and other demands.	Improve access to the Milsap Bar Campground on the North Fork Feather River.
Management Prescriptions	**Implementation**
Minimal Management – Rx7	Refer to description in Table A-1
Timber Intensive – Rx 16	Refer to description in Table A-1

Table A-3. Kellogg Management Area and Applicable Management Prescriptions' Standards and Guidelines.

Management Area Direction	Standards and Guidelines
Recreation	
Protect and enhance recreation use of the Middle Fork of the Feather River.	Manage Wildlife Scenic Zones consistent with the Wild and Scenic Rivers Act.
Provide for semi-primitive recreation.	Maintain the semi-primitive character of the Middle Fork and Bald Rock in areas without roads.
Expand and improve the trail system.	Nominate Hartman Bar Trail as a National Recreation Trail when right-of-way is secured; improve facilities to meet planned uses.
Wildlife	
Protect and improve emphasis species habitat.	Coordinate projects affecting wild trout streams with DFG. Provide suitable peregrine falcon habitat in the Bald Rock Dome area.
Facilities	
Upgrade forest arterials and collectors.	Improve the Milsap campground access road as use studies show need to meet demand.
Special Areas	
Protect unique scenic values.	Continue special management of Feather Falls Scenic Area; recommend designation of Feather Falls as a National Natural Landmark.
Protect unique scenic and botanic values.	Preserve the champion ponderosa pine adjacent to the Hartman Bar Trail.
Management Prescriptions	**Implementation**
Minimal Management – Rx7	Refer to description in Table A-1
Intensive Range – Rx16	
Purpose	*Type of Lands*
Intensify range management on certain allotments to increase forage production and consumption.	Sparsely or non-forested lands which includes approximately 15,000 acres distributed within several Management Areas.
Direction	*Standards and Guidelines*
Range – Expand productivity and use on selected range allotments under intensive	Apply intensive management methods where opportunities exist and where cost-efficient, including:

Management Area Direction	Standards and Guidelines
management.	• Development of water sources, fencing, cattle guards, and corrals to control distribution; • Non-structural improvement including sagebrush conversion to grass, broadcast burning, treatment of competing vegetation such as brush or certain undesired weeds, and fertilization where appropriate.
Cultural Resources – Protect significant properties.	Develop a long-term inventory and appraisal strategy.
Feather Falls Scenic Area-Rx3	
Purpose	*Type of Lands*
To be managed for scenic value and recreation use. Other uses to be allowed if compatible with these objectives.	The Scenic Area was established in 1965 by the Regional Forester and is recommended that Feather Falls be declared a National Natural Landmark to preserve scenic beauty.
Direction	*Standards and Guidelines*
Recreation – Provide dispersed recreation. Maintain and improve developed recreation sites. Allow ORVs where user conflict or resource damage is unlikely.	Maintain ROS classes of Roaded Natural and Semi-Primitive Non-Motorized. Construct recreation facilities only to meet safety and sanitary needs, but interpret cultural, ecological, and geologic features for the public. Close all trails to motorized use.
Visual Resources – Maintain high Visual Quality Objectives.	Meet VQO of Retention.
Direction	*Standards and Guidelines (cont'd)*
Timber – Protect scenic and recreational values. Use appropriate special cutting methods for unscheduled yields without forest regulation.	Harvest timber only when the scenic quality can be maintained or improved or to prevent disease or insect epidemic.
Minerals and Materials – Protect unique scenic values.	Withdraw from mineral entry.
Energy – Preclude hydroelectric development if all resources cannot be reasonable protected.	Maintain the natural free flowing condition of Fall River.
Lands – Acquire areas crucial to recreation management.	Retain existing federal ownership. Acquire those lands necessary to protect recreational and scenic quality.
Law Enforcement – Protect resources and forest visitors according to law.	Provide active law enforcement commensurate with use to prevent vandalism at the Feather Falls trailhead.

Source: USFS (1988)

A-4. Feather Falls Management Area and Applicable Management Prescriptions' Standards and Guidelines.

Management Area Direction	Standards and Guidelines
Recreation	
Protect and enhance recreation of the Middle Fork of the Feather River	Manage the Wild and Scenic Zones consistent with the Wild and Scenic Rivers Act.
Allow ORVs where user conflict or resource damage is unlikely	Prohibit ORVs on the Feather Falls National Recreation Trail (NRT).
Visual Resources	
Maintain pleasing visual corridors	Protect Feather Falls and Fobestown Roads viewsheds.
Wildlife	
Protect and improve emphasis species	Coordinate with the DFG when projects affect the Middle Fork Feather River

Management Area Direction	Standards and Guidelines
habitat.	Wild Trout Stream.
Special Areas	
Protect unique scenic values.	Continue special management of the Feather Falls Scenic Area. Designate Feather Falls as a National Natural Landmark. Initiate a study to determine the suitability of Fall River from Nelson's Crossing to Lake Oroville for inclusion in the Wild and Scenic River System.
Management Prescriptions	**Implementation**
Minimal Management – Rx7	Refer to description in Table A-1
Withdrawn – Non-Productive	Refer to description in Table A-3
Feather Falls Scenic Area-Rx3	Refer to description in Table A-3
Intensive Range – Rx16	Refer to description in Table A-3
Purpose	*Type of Lands*
Intended to provide a complete spectrum of recreation experiences. Preservation of the River's free-flowing condition and the areas outstanding values are the paramount management goals.	Includes lands within the Middle Fork of the Feather River and its immediate environment, which were established as a Wild and Scenic River by Congress in 1968.
Direction	*Standards and Guidelines*
Recreation – Implement the Wild and Scenic Rivers Act and provide a variety of forest-related recreation.	Increase public understanding of the management direction for the Wild and Scenic River and manage lands according to their appropriate Recreation Opportunity Class, including scenic and wild zones.
Visual Resources – Maintain high visual quality objectives (VQOs).	Meet VQO of "Retention."
Wildlife – Protect and improve wild trout habitat.	Implement a wild trout habitat management plan and maintain sufficient flow in the river to meet needs of the Wild Trout fishery.
Range – Implement grazing systems to protect streams and streambanks.	Do not permit domestic livestock grazing within Wild zone.
Timber – Protect recreational, scenic, and fish and wildlife values. Use appropriate special cutting methods for unscheduled yields without forest regulation.	Harvest timber only to maintain or enhance use safety and scenic quality, protect special habitat, or prevent insect or disease epidemic.
Lands – Acquire land and easements to implement the Wild and Scenic Rivers Act and to facilitate management of other resources. Allow private uses that have public benefits.	Implement the Landownership Adjustment Plan – Wild and Scenic Zones (1978), Recreation zone (1980), and Recreation Zone Recreation Management Plan (1980). Major provisions of these plans include specific guidelines for acquisition and land exchanges. No refuse disposal is allowed. Issue permits for activities with public benefit if compatible with prescription. However, transportation corridors, including utility systems, are not allowed.

Source: USFS (1988)